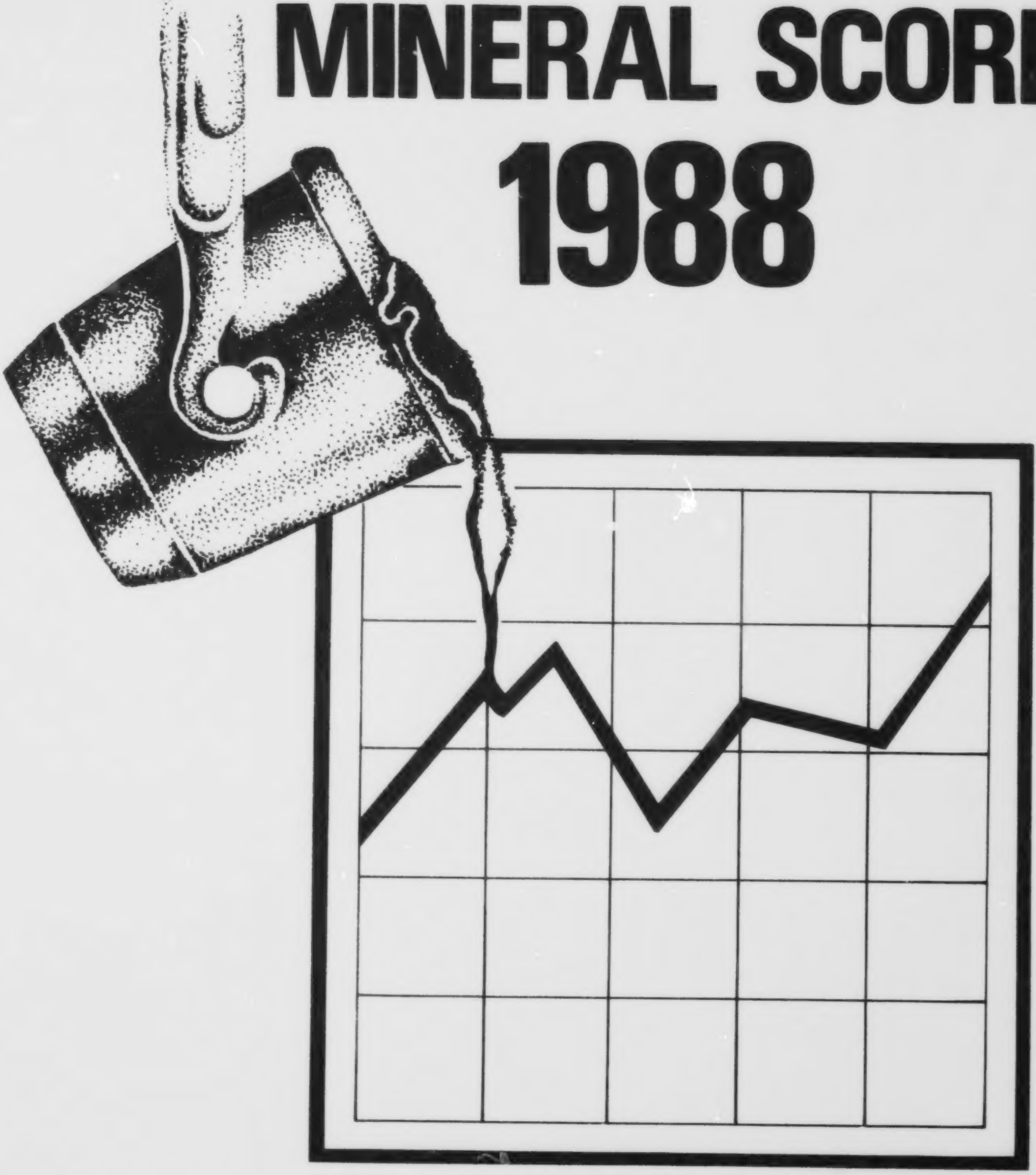
ONTARIO MINERAL SCORE 1988



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ONTARIO MINERAL SCORE

1988

Mineral Development and Lands Branch

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"1988 Ontario Mineral Score"

Ontario Ministry of Northern Development and Mines,
Mineral Development and Lands Branch

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"1988 Ontario Mineral Score/Mineraux Score de l'Ontario"

Ministère du Développement du Nord et des Mines de l'Ontario Direction du développement des minéraux et des terrains

The following symbols were used wherever applicable:

e estimated
0 nil
n/a-not available or not applicable
p preliminary
r- revised
x confidential
.. relatively small

Although the Ontario Ministry of Northern Development and Mines has made every effort to ensure the accuracy of the data appearing in this publication, it cannot assume responsibility for any inaccuracy which may occur.

Les symboles suivants ont été utilisés:

e estimation
0 nil
n/a non disponible ou non applicable
p préliminaire
r revisé
x confidentiel
.. relativement petit

Bien que le ministère du Développement du Nord et des Mines de l'Ontario ait veillé à la justesse des données contenues dans cette publication, il ne peut être tenu responsable des erreurs qui pourraient survenir.

INTRODUCTION

This is the eighth edition of SCORE (Screen Co-ordinated Resource Evaluation) prepared by the Information and Statistics Section of the Ontario Ministry of Northern Development and Mines.

The importance of mining statistics was highlighted by Archibald Blue, Director of the Ontario Bureau of Mines, who stated in 1891 that:
"Mining statistics are of first importance as without them we cannot know definitely the state and progress of an industry nor the direction which it may be heading, nor the effect produced upon it by legislation nor public policy, nor the parts of it which are weakest and most in need of help. Statistics are to industry what pulse and temperature are to the human body. They enable us to observe symptoms and suggest remedies when these are needed."

The purpose of this publication is to assist in keeping the mining industry, the general public and the government fully informed on matters pertaining to one of the major industries in Ontario. Information contained in this book includes: volume and value of mineral commodities, employment, wages, production costs, exploration expenditures and other valuable data.

In last year's edition we included a questionnaire to help us monitor the statistical needs of our audience. The response ratio was very high. The large majority of respondents feel that SCORE is a very useful publication. We have already implemented in this issue many of the comments and suggestions reported on the questionnaire. We will continue making further improvements in the upcoming editions of SCORE.

The preliminary figures published in the previous edition of SCORE were revised to enhance accuracy. Due to rounding, slight numerical differences may occur between a total and the sum of the components of the total.

The Ministry of Northern Development and Mines acknowledges the assistance and co-operation provided by Statistics Canada, and Energy, Mines and Resources Canada. The Ministry also wishes to thank all the companies that have completed the Census forms which are the source of most of the information provided.

Should you have any questions, comments or suggestions regarding any section of SCORE, or should you need additional copies, feel free to contact:

Peter Mancini, Manager
Information and Statistics Section
Ministry of Northern Development and Mines
880 Bay Street, 3rd Floor
Toronto, Ontario, Canada (416) 965-0211

We hope you will find this publication useful.

John Gammon
Director
Mineral Development and Lands Branch
Mines and Minerals Division
Ontario Ministry of Northern Development and Mines

August,1989

INTRODUCTION

Voici la huitième édition de SCORE (Evaluation de ressources coordonnées sur écran) préparée par le Bureau d'information et de statistiques du ministère du Développement du Nord et des Mines de l'Ontario.

En 1981, Archibald Blue, directeur du Bureau des mines de l'Ontario exprimait ainsi l'importance de la publication de statisques minières:

"Les statistiques minières sont d'importance primordiale car sans elles, il serait difficile d'évaluer les progrès d'une industrie, la direction que prend l'industrie les effets des lois et des politiques publiques et les secteurs les plus faibles de l'industrie qui ont besoin d'aide. Les statistiques sont pour l'industrie ce que le pouls et la température sont pour le corps humain. Elles nous permettent d'observer les symptomes et de recommander les remèdes nécessaires."

Cette publication servira à informer l'industrie minière, le public et le gouvernement sur l'une des plus importantes industries en Ontario. De nombreux renseignements sont contenus dans ce texte, y compris: le volume et la valeur des produits miniers, la main d'oeuvre, les salaires, les coûts de production, les dépenses d'exploration et d'autres données indispensables.

Dans l'édition de l'an dernier, nous avions inséré un questionnaire afin de nous permettre d'évaluer les besoins de nos lecteurs. Le nombre de répondants a été très élevé. La grande majorité des répondants sont d'avis que SCORE est très utile. Nous avons déjà incorporé plusieurs de vos recommandations dans cette édition. Nous sommes engagés à améliorer, d'année en année, les éditions de SCORE.

Les données préliminaires contenues dans les éditions précédentes de SCORE ont été revisées afin d'assurer leur précision. Vous remarquerez de petites différences dans les calculs en raison du processus d'arrondissage des chiffres.

Le ministère du Développement du Nord et des Mines reconnaît l'aide et la coopération de Statistiques Canada et d'Energie, mines et ressources Canada dans le processus de compilation des données. Le ministère remercie également les compagnies qui ont complété les fiches de recensement qui sont à l'origine de nos renseignements.

Si vous désirez de plus amples renseignements sur SCORE, si vous avez besoin d'information en français ou si vous voulez d'avantage de copies de cette publication, contactez:

Peter Mancini
Directeur du Bureau d'information et de statistiques
Ministère du Développement du Nord et des Mines,
3 ième étage, 880 rue Bay, Toronto (Ontario) Canada M5S 1Z8
(416) 965-0211

Nous espérons que cette publication vous sera utile!

John Gammon, Directeur
Direction du développement des minéraux et des terrains
Division des mines et des minéraux
Ministère du Développement du Nord et des Mines

Août 1989

EXECUTIVE SUMMARY1988

The total value of mineral production in Ontario in 1988 was estimated at $7.2 billion - up 24% from the $5.8 billion recorded in 1987. The value of mineral production in 1988 represents the highest ever record in the province.

The value of metallic minerals amounted to $5.5. billion or 76% of total value of mineral production. Structural materials accounted for almost 18% of the $7.2 billion total. Non metals made up almost 4% while fuels contributed to a very small portion of total value of mineral output.

The five major minerals in terms of value were: nickel ($2.2 billion), gold ($1.0 billion), copper ($824 million), zinc ($549 million) and uranium ($523 million).

In 1987 gold was the largest income producer among Ontario's minerals. In 1988 however, the value of nickel jumped by almost 140% from the previous year pushing it ahead of gold.

The most recent employment figures (1987) reveal that almost 35,000 people are employed in mining smelting and refining in Ontario. It is estimated that an additional 50,000 people are employed in the metals fabricating industry.

Total expenditures on exploration and development amounted to $632 million in 1987. This represents a jump of 77% over the preceeding year. The number of claims recorded in 1988 were slightly under the 38,000 mark.

SOMMAIRE 1988

En 1988, la valeur totale de la production minéralogique en Ontario a été évaluée à 7,2 milliards $, une hausse de 24 pour cent par rapport au record de 5,8 milliards $ enregistré en 1987. La valeur de la production minéralogique de 1988 établit un nouveau record en province.

La valeur des minéraux métalliques se chiffrait à 5,5 millards $, soit 76 pour cent de la valeur totale de la production minéralogique. Des 7,2 milliards $, 18 pour cent provenait de materiaux structurels, 4 pour cent était des non-metaux tandis que le combustible ne comportait qu'une très petite portion de la valeur de la production minéralogique.

Les cinq principaux minéraux selon leur valeur étaient: le nickel (2,2 milliards $), l'or (1.0 milliard $), le cuivre (824 millions $), le zinc (549 millions $) et l'uranium (523 millions $)

En 1987, l'or était le plus grand générateur de revenu parmi les minéraux de l'Ontario. Toutefois en 1988, la valeur du nickel a devancé l'or en augmentant d'environ 140 pour cent de plus que l'année précédente.

Les plus récentes statistiques d'emploi (1987) révèlent qu'en Ontario, près de 35 000 personnes travaillent dans le domaine minier, dans les fonderies et dans les raffineries. On estime qu'un autre 50 000 personnes travaillent dans l'industrie de fabrication de métaux.

Les dépenses totales en exploration et en développement se chiffraient à 632 millions $ en 1987, une hausse de 77 pour cent par rapport à l'année précédente. Un peu de moins de 38 000 claims ont été enregistrées en 1988.

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Value of production of all minerals in Canada
Value of production of all minerals in Ontario
Value of production of metals in Ontario
Value of production of non- metals in Ontario
Value of production of structural materials in Ontario
Value of production of fuels in Ontario
Cadmium
Calcium
Cement
Clay Products
Cobalt
Copper
Gold
Gypsum
Iron Ore
Lead
Lime
Magnesium
Natural Gas
Nepheline Syenite
Nickel
Peat
Petroleum
Platinum Group
Quartz
Salt
Sand & Gravel
Selenium
Silver
Soapstone,Talc
Stone
Sulphur
Tellurium
Uranium(U)
Zinc

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EMPLOYMENT IN THE ONTARIO MINING INDUSTRY

EMPLOYMENT AND EMPLOYEE PRODUCTIVITY IN ONTARIO

	TOTAL EMPLOY-MENT	MINE PIT, QUARRY EMPLOYMENT	MILL PLANT, KILN EMPLOYMENT	ADMIN. AND OTHER EMPLOYMENT	ORE MILLED/REMOVED IN 000'S TONNES	PRODUCTION PER EMPLOYEE TOTAL	 MINE PIT, QUARRY	 MILL PLANT, KILN	 ADMIN. AND OTHER
TOTAL METALLIC MINES						MILLED	PER EMPLOYEE		
1981	25 808	16 746	3 784	5 278	45 019	1 744	2 688	11 897	8 529
1982	23 832	15 655	3 316	4 861	34 139	1 432	2 180	10 295	7 023
1983	21 354	13 982	3 071	4 301	36 007	1 686	2 575	11 724	8 371
1984	21 622	14 173	3 274	4 175	44 665	2 065	3 151	13 642	10 698
1985	19 891	12 918	3 019	3 954	44 201	2 222	3 421	14 640	11 178
1986	18 922	12 439	2 958	3 525	41 897	2 214	3 368	14 163	11 885
1987	18 555	11 889	3 200	3 466	41 291	2 225	3 473	12 903	11 913
GOLD QUARTZ MINES									
1981	3 438	2 147	702	589	2 906	845	1 353	4 139	4 933
1982	3 272	2 021	654	597	3 509	1 072	1 736	5 365	5 877
1983	3 578	2 156	767	655	3 595	1 004	1 667	4 687	5 488
1984	3 823	2 305	927	591	4 693	1 227	2 035	5 062	7 940
1985	3 599	2 173	891	535	5 216	1 449	2 400	5 853	9 749
1986	3 969	2 312	1 020	637	7 240	1 824	3 131	7 097	11 365
1987	4 526	2 703	1 057	766	7 657	1 691	2 832	7 243	9 995
URANIUM MINES									
1981	5 172	3 126	590	1 456	6 226	1 203	1 991	10 551	4 275
1982	4 860	3 157	489	1 214	6 953	1 430	2 202	14 219	5 727
1983	4 642	3 153	424	1 065	6 296	1 356	1 996	14 849	5 911
1984	4 937	3 431	444	1 062	7 000	1 417	2 040	15 765	6 591
1985	4 684	3 305	400	979	6 527	1 393	1 974	16 318	6 667
1986	4 303	3 374	340	589	6 257	1 454	1 854	18 401	10 622
1987	4 043	3 196	305	542	5 473	1 353	1 712	17 943	10 097
IRON MINES									
1981	2 168	886	861	421	16 857	7 775	19 025	19 578	40 040
1982	1 716	613	731	372	11 427	6 659	18 641	15 632	30 718
1983	1 512	565	590	357	10 682	7 064	18 905	18 104	29 920
1984	1 592	599	662	331	12 662	7 953	21 138	19 127	38 254
1985	1 476	516	645	315	12 055	8 167	23 362	18 689	38 269
1986	1 240	339	559	342	9 739	7 853	28 727	17 421	28 475
1987	1 090	301	517	272	8 916	8 180	29 622	17 246	32 780

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

EMPLOYMENT AND EMPLOYEE PRODUCTIVITY IN ONTARIO

	TOTAL EMPLOY-MENT	MINE PIT, QUARRY EMPLOYMENT	MILL PLANT, KILN EMPLOYMENT	ADMIN. AND OTHER EMPLOYMENT	ORE MILLED/REMOVED IN 000'S TONNES	PRODUCTION PER EMPLOYEE			
						TOTAL	MINE PIT, QUARRY	MILL PLANT, KILN	ADMIN. AND OTHER
COPPER-GOLD-SILVER M						MILLED	PER EMPLOYEE		
1981	3 427	1 872	749	806	6 964	2 032	3 720	9 298	8 640
1982	3 231	1 795	645	791	6 521	2 018	3 632	10 109	8 243
1983	2 923	1 643	575	705	6 326	2 164	3 850	11 001	8 972
1984	2 895	1 652	536	707	6 587	2 275	3 987	12 289	9 316
1985	2 676	1 535	455	686	6 444	2 408	4 197	14 162	9 393
1986	2 574	1 481	453	640	6 625	2 573	4 473	14 623	10 350
1987	2 664	1 359	708	597	6 369	2 390	4 686	8 995	10 668
NICKEL-COPPER MINES									
1981	11 384	8 559	856	1 969	11 944	1 049	1 395	13 953	6 066
1982	10 558	7 937	773	1 848	5 615	531	707	7 264	3 038
1983	8 515	6 333	700	1 482	9 020	1 059	1 424	12 885	6 086
1984	8 202	6 061	691	1 450	13 671	1 666	2 255	19 784	9 428
1985	7 338	5 310	614	1 414	13 905	1 894	2 618	22 647	9 834
1986	6 732	4 861	586	1 285	12 036	1 787	2 475	20 538	9 366
1987	6 094	4 250	592	1 252	12 850	2 108	3 023	21 705	10 263
SILVER-COBALT MINES									
1981	219	156	26	37	122	557	783	4 699	3 302
1982	195	132	24	39	114	583	861	4 738	2 916
1983	184	132	15	37	88	477	665	5 858	2 375
1984	173	125	14	34	52	302	418	3 735	1 538
1985	118	79	14	25	54	455	680	3 838	2 149
1986	104	72	0	32	0	0	0	0	0
1987	138	80	21	37	26	185	319	1 216	690
TOTAL NON-METALLIC M						MINED	PER EMPLOYEE		
1981	1 114	625	321	168	5 757	5 167	9 210	17 933	34 265
1982	1 078	603	294	181	5 975	5 542	9 909	20 323	33 012
1983	1 138	663	289	186	6 483	5 696	9 778	22 432	34 854
1984	1 195	725	278	192	7 541	6 310	10 401	27 125	39 276
1985	1 149	672	306	171	6 846	5 958	10 187	22 371	40 034
1986	1 217	731	294	192	7 541	6 196	10 316	25 649	39 276
1987	1 199	720	297	182	7 084	5 908	9 838	23 851	38 923

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

EMPLOYMENT AND EMPLOYEE PRODUCTIVITY IN ONTARIO

	TOTAL EMPLOYMENT	MINE PIT, QUARRY EMPLOYMENT	MILL PLANT, KILN EMPLOYMENT	ADMIN. AND OTHER EMPLOYMENT	ORE MILLED/REMOVED IN 000'S TONNES	PRODUCTION PER EMPLOYEE			
						TOTAL	MINE PIT, QUARRY	MILL PLANT, KILN	ADMIN. AND OTHER
PEAT BOG						HARVESTED	PER EMPLOYEE		
1981	35	8	23	4	7	189	831	289	1 662
1982	33	8	21	4	4	136	561	214	1 123
1983	34	7	23	4	6	168	816	248	1 429
1984	35	7	24	4	5	156	781	228	1 368
1985	30	7	19	4	5	175	752	277	1 316
1986	30	8	18	4	5	155	581	258	1 162
1987	27	7	16	4	3	112	433	189	759
GYPSUM MINES						MINED	PER EMPLOYEE		
1981	161	120	20	21	685	4 255	5 709	34 254	32 623
1982	126	88	20	18	470	3 728	5 338	23 487	26 097
1983	152	117	17	18	875	5 757	7 479	51 475	48 615
1984	184	146	19	19	1 199	6 515	8 210	63 092	63 092
1985	184	138	20	26	1 100	5 979	7 972	55 007	42 313
1986	215	169	20	26	1 324	6 158	7 835	66 207	50 928
1987	217	167	20	30	1 421	6 548	8 509	71 056	47 370
TALC & SOAPSTONE M									
1981	59	11	35	13	80	1 358	7 286	2 289	6 165
1982	70	12	41	17	86	1 225	7 147	2 091	5 044
1983	78	12	46	20	83	1 064	6 920	1 805	4 152
1984	91	12	55	24	115	1 262	9 575	2 089	4 787
1985	119	29	69	21	102	855	3 510	1 475	4 847
1986	115	31	60	24	208	1 811	6 721	3 472	8 682
1987	108	22	62	24	89	822	4 039	1 433	3 703
FELDSPAR & QUARTZ M									
1981	330	57	216	57	1 308	3 963	22 943	6 054	22 943
1982	290	47	188	55	1 058	3 648	22 512	5 628	19 238
1983	288	50	183	55	1 175	4 078	23 493	6 419	21 357
1984	263	48	162	53	1 217	4 625	25 343	7 509	22 952
1985	269	48	178	43	961	3 570	20 010	5 396	22 337
1986	270	48	176	46	1 002	3 712	20 881	5 694	21 789
1987	268	48	176	44	1 122	4 187	23 380	6 376	25 506

SOURCE ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

EMPLOYMENT AND EMPLOYEE PRODUCTIVITY IN ONTARIO

	TOTAL EMPLOY-MENT	MINE PIT, QUARRY EMPLOYMENT	MILL PLANT, KILN EMPLOYMENT	ADMIN. AND OTHER EMPLOYMENT	ORE MILLED/REMOVED IN 000'S TONNES	PRODUCTION PER EMPLOYEE			
						TOTAL	MINE PIT, QUARRY	MILL PLANT, KILN	ADMIN. AND OTHER
SALT MINES						MINED	PER EMPLOYEE		
1981	494	[illegible]	8	67	3 663	7 415	8 742	457 882	54 672
1982	528	438	8	82	4 347	8 233	9 924	543 393	53 013
1983	558	466	8	84	4 335	7 769	9 303	541 929	51 612
1984	593	499	8	86	4 991	8 416	10 001	623 846	58 032
1985	515	436	8	71	4 660	9 048	10 688	582 521	65 636
1986	550	458	8	84	4 986	9 064	10 885	623 190	59 351
1987	538	459	7	72	4 434	8 241	9 659	633 384	61 579
MISC. NON-METAL M									
1981	35	10	19	6	14	397	1 391	732	2 319
1982	31	10	16	5	10	320	993	620	1 986
1983	28	11	12	5	9	320	815	747	1 794
1984	29	13	10	6	14	469	1 048	1 362	2 271
1985	32	14	12	6	18	559	1 277	1 490	2 981
1986	37	17	12	8	16	443	965	1 367	2 051
1987	41	17	16	8	15	363	877	931	1 863
TOTAL STONE QUARRIES									
1981	1 468	866	206	396	37 545				
1982	1 208	761	101	346	28 461				
1983	1 200	817	90	293	33 831				
1984	1 378	942	82	354	41 387				
1985	1 348	1 009	43	296	45 853				
1986	1 776	1 149	191	436	53 439				
1987	2 132	1 045	658	429	47 807				
GRANITE QUARRIES									
1981	138	28	72	38	1 739				
1982	132	22	71	39	1 546				
1983	155	39	81	35	1 041				
1984	170	56	74	40	1 730				
1985	148	130		18	2 520				
1986	141	38	72	31	1 364				
1987	141	43	71	27	1 300				

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

EMPLOYMENT AND EMPLOYEE PRODUCTIVITY IN ONTARIO

	TOTAL EMPLOY-MENT	MINE PIT, QUARRY EMPLOYMENT	MILL PLANT, KILN EMPLOYMENT	ADMIN. AND OTHER EMPLOYMENT	ORE MILLED/REMOVED IN 000'S TONNES	PRODUCTION PER EMPLOYEE			
						TOTAL	MINE PIT, QUARRY	MILL PLANT, KILN	ADMIN. AND OTHER
LIMESTONE QUARRIES									
1981	1 317	826	134	357	35 568				
1982	1 059	727	30	302	26 737				
1983	1 002	746	9	247	31 962				
1984	1 148	842	8	298	38 808				
1985	1 165	849	43	273	42 281				
1986	1 578	1 063	119	396	50 819				
1987	1 944	955	587	402	45 399				
MARBLE QUARRIES									
1981	4	4		0	90				
1982	5	4		1	148				
1983	4	3		1	91				
1984	24	17		7	105				
1985	1	1		0	190				
1986	11	9		2	189				
1987	7	7		0	191				
SANDSTONE QUARRIES									
1981	4	4		0	4				
1982	9	6		3	5				
1983	11	7		4	5				
1984	8	5		3	6				
1985	3	3		0	5				
1986	8	7		1	58				
1987	5	5		0	13				
SHALE QUARRIES									
1981	5	4		1	144				
1982	3	2		1	25				
1983	28	22		6	732				
1984	26	21		5	738				
1985	29	25		4	857				
1986	36	31		5	1 009				
1987	34	34		0	904				

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

EMPLOYMENT AND EMPLOYEE PRODUCTIVITY IN ONTARIO

	TOTAL EMPLOY-MENT	MINE PIT, QUARRY EMPLOYMENT	MILL PLANT, KILN EMPLOYMENT	ADMIN. AND OTHER EMPLOYMENT	ORE MILLED/REMOVED IN 000'S TONNES	PRODUCTION PER EMPLOYEE TOTAL	PRODUCTION PER EMPLOYEE MINE PIT, QUARRY	PRODUCTION PER EMPLOYEE MILL PLANT, KILN	PRODUCTION PER EMPLOYEE ADMIN. AND OTHER
SLATE QUARRIES									
1981	0	0		0	0				
1982	0	0		0	0				
1983	0	0		0	0				
1984	2	1		1	0				
1985	2	1		1	0				
1986	2	1		1	0				
1987	1	1		0	0				
SAND AND GRAVEL PITS									
1981	1 159	529	22	608	28 951				
1982	916	376	5	535	19 313				
1983	898	410	18	470	20 335				
1984	728	421	19	288	23 330				
1985	1 177	527	36	614	27 269				
1986	2 233	1 421	100	712	71 507				
1987	2 796	1 893	122	781	83 873				
GRAND TOTAL FOR ALL SIC'S									
! 1981	31 549	18 766	4 333	6 450	117 272				
! 1982	29 034	17 395	3 716	5 923	87 888				
! 1983	26 590	15 872	3 468	5 250	96 656				
! 1984	26 923	16 261	3 653	5 009	116 923				
! 1985	25 565	15 126	3 404	5 035	124 169				
1986	24 148	15 740	3 543	4 865	174 384				
1987	24 682	15 547	4 277	4 858	180 055				

! TOTAL EMPLOYMENT INCLUDES 2000 EMPLOYEES FROM SMALL S & G AND STONE INDUSTRIES.

NOTE: PRODUCTION FOR SAND & GRAVEL FROM 1980 - 1985 DOES NO INCLUDE SMALLER OPERATIONS.
PRODUCTION FOR SAND & GRAVEL IN 1986 REPRESENTS 84% OF TOTAL AGGREGATE PRODUCTION.
PRODUCTION FOR METALLIC AND NON-METALLIC MINES REFER TO ORE MILLED OR MINED.
EMPLOYMENT AND EMPLOYEE PRODUCTIVITY FOR SALT MINES EXCLUDES ALL 4 BRINING WELLS.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF PRODUCTION
BY
GEOGRAPHIC DIVISIONS

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
COUNTY OF BRANT	NATURAL GAS	CU.M	359	47
	SAND & GRAVEL	TONNE	1 617	6 791
				6 838
COUNTY OF BRUCE	SAND & GRAVEL	TONNE	1 297	1 521
	STONE	TONNE	77	3 418
				4 939
COUNTY OF DUFFERIN	SAND & GRAVEL	TONNE	1 772	5 153
				5 153
COUNTY OF ELGIN	CLAY IN BRICK	BRICK	X	X
	CLAY IN FLUE LINING	M	X	X
	CLAY IN SEWER PIPE	M	X	X
	NATURAL GAS	CU.M	71 210	9 360
	PETROLEUM	CU.M	22	3 310
	SAND & GRAVEL	TONNE	696	1 591
				17 949
COUNTY OF ESSEX	LIME	TONNE	X	X
	PETROLEUM	CU.M	48	7 347
	SALT	TONNE	X	X
	SAND & GRAVEL	TONNE	227	673
	STONE	TONNE	3 200	12 641
				105 328
COUNTY OF FRONTENAC	SAND & GRAVEL	TONNE	382	665
	STONE	TONNE	X	X
	TREMOLITE	TONNE	X	X
				6 131

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
COUNTY OF GREY	SAND & GRAVEL	TONNE	3 063	8 053
	STONE	TONNE	231	1 193
				----------
				9 246

COUNTY OF HASTINGS	SAND & GRAVEL	TONNE	697	930
	STONE	TONNE	X	X
	TALC	TONNE	X	X
				----------
				5 076

COUNTY OF HURON	NATURAL GAS	CU.M	7 118	936
	PETROLEUM	CU.M	..	12
	SALT	TONNE	2 502	68 584
	SAND & GRAVEL	TONNE	1 954	3 958
				----------
				73 490

COUNTY OF KENT	CLAY IN TILE	TILE	43	12
	NATURAL GAS	CU.M	135 347	17 790
	PETROLEUM	CU.M	20	3 072
	SAND & GRAVEL	TONNE	609	2 676
				----------
				23 550

COUNTY OF LAMBTON	NATURAL GAS	CU.M	57 245	7 524
	PETROLEUM	CU.M	41	6 289
	SALT	TONNE	X	X
	SAND & GRAVEL	TONNE	300	924
	SULPHUR	TONNE	X	X
				----------
				22 324

COUNTY OF LANARK	SAND & GRAVEL	TONNE	922	1 059
	STONE	TONNE	281	2 088
				----------
				3 147

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
COUNTY OF LENNOX AND ADDINGTON	CEMENT	TONNE	X	X
	SAND & GRAVEL	TONNE	X	X
	STONE	TONNE	1 632	4 346
				58 333
COUNTY OF MIDDLESEX	CLAY IN BRICK	BRICK	X	X
	CLAY IN OTHER PRODCT	N/A	N/A	X
	CLAY IN TILE	TILE	X	X
	PETROLEUM	CU. M	4	599
	SAND & GRAVEL	TONNE	6 947	25 990
				28 253
COUNTY OF NORTHUMBERLAND	SAND & GRAVEL	TONNE	1 970	4 849
	STONE	TONNE	2 973	2 910
				7 759
COUNTY OF OXFORD	CEMENT	TONNE	587	56 016
	GYPSUM	TONNE	X	X
	LIME	TONNE	X	X
	NATURAL GAS	CU. M	6 140	807
	PETROLEUM	CU. M	1	91
	SAND & GRAVEL	TONNE	2 026	5 811
	STONE	TONNE	2 757	13 458
				119 146
COUNTY OF PERTH	CEMENT	TONNE	X	X
	SAND & GRAVEL	TONNE	X	X
	STONE	TONNE	619	766
				58 853
COUNTY OF PETERBOROUGH	MAGNETITE	TONNE	X	X
	NEPHELINE SYENITE	TONNE	X	X

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
COUNTY OF PETERBOROUGH	SAND & GRAVEL	TONNE	2 171	6 810
	STONE	TONNE	568	8 232
				35 740
COUNTY OF PRINCE EDWARD	CEMENT	TONNE	X	X
	SAND & GRAVEL	TONNE	125	482
	STONE	TONNE	X	X
				86 651
COUNTY OF RENFREW	CALCIUM	KG	X	X
	LIME	TONNE	X	X
	MAGNESIUM	KG	X	X
	SAND & GRAVEL	TONNE	1 281	2 056
	STONE	TONNE	444	5 802
				58 236
COUNTY OF SIMCOE	CLAY IN OTHER PRODCT	N/A	N/A	572
	SAND & GRAVEL	TONNE	5 167	14 793
	STONE	TONNE	5 274	23 637
				39 002
COUNTY OF VICTORIA	SAND & GRAVEL	TONNE	5 071	14 083
	STONE	TONNE	1 835	12 769
				26 852
COUNTY OF WELLINGTON	CLAY IN BRICK	BRICK	X	X
	LIME	TONNE	X	X
	NATURAL GAS	CU.M	1 204	158
	SAND & GRAVEL	TONNE	6 188	22 833
	STONE	TONNE	304	981
				29 758

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
DISTRICT OF ALGOMA	IRON ORE	TONNE	X	X
	LIME	TONNE	260	17 356
	SAND & GRAVEL	TONNE	1 052	2 318
	STONE	TONNE	..	5
	URANIUM	KG	4 901	581 294
	YTTRIUM	KG	X	X
				....
				649 306
				....
DISTRICT OF COCHRANE	CADMIUM	KG	X	X
	COPPER	KG	X	X
	GOLD	G	12 293	232 123
	LEAD	KG	X	X
	LIZARDITE FILLER	TONNE	X	X
	PLATINUM GROUP	KG	X	X
	SAND & GRAVEL	TONNE	2 193	4 526
	SELENIUM	KG	X	X
	SILVER	KG	258	79 650
	STONE	TONNE	36	237
	SULPHUR	TONNE	X	X
	TALC	TONNE	X	X
	ZINC	KG	X	X
				....
				835 303
				....
DISTRICT OF KENORA	GOLD	G	9 402	182 153
	SAND & GRAVEL	TONNE	1 310	1 744
	SILVER	KG	1	277
	STONE	TONNE	847	7 503
				....
				191 677
				....
DISTRICT OF MANITOULIN	QUARTZ	TONNE	X	X
	SAND & GRAVEL	TONNE	329	705
	STONE	TONNE	X	X
				....
				16 693
				....

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
DISTRICT OF NIPISSING	IRON ORE	TONNE	X	X
	SAND & GRAVEL	TONNE	X	X
	STONE	TONNE	2	28
				62 338
DISTRICT OF PARRY SOUND	SAND & GRAVEL	TONNE	635	2 201
	STONE	TONNE	2	201
				2 402
DISTRICT OF RAINY RIVER	SAND & GRAVEL	TONNE	305	357
				357
DISTRICT OF SUDBURY	COPPER	KG	X	X
	GOLD	G	1 500	28 550
	SAND & GRAVEL	TONNE	1 059	2 225
	SILVER	KG	X	X
	STONE	TONNE	1 250	7 588
				39 146
DISTRICT OF THUNDER BAY	CADMIUM	KG	X	X
	COPPER	KG	22 210	53 794
	GEMSTONES	TONNE	X	X
	GOLD	G	24 550	471 731
	LEAD	KG	4 661	4 931
	SAND & GRAVEL	TONNE	2 733	5 026
	SILVER	KG	108	33 377
	STONE	TONNE	432	1 766
	SULPHUR	TONNE	29	2 687
	ZINC	KG	121 257	154 481
				729 377
DISTRICT OF TIMISKAMING	BARITE	TONNE	X	X

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
DISTRICT OF TIMISKAMING	GOLD	G	3 573	68 005
	IRON ORE	TONNE	X	X
	SAND & GRAVEL	TONNE	910	2 522
	SILVER	KG	18	5 441
				120 140
DM OF MUSKOKA	SAND & GRAVEL	TONNE	797	1 508
				1 508
PROVISIONAL COUNTY OF HALIBURTON	SAND & GRAVEL	TONNE	235	196
	STONE	TONNE	7	260
				456
RM OF DURHAM	CEMENT	TONNE	X	X
	SAND & GRAVEL	TONNE	X	X
	STONE	TONNE	1 534	2 618
				87 768
RM OF HALDIMAND-NORFOLK	GYPSUM	TONNE	1 284	13 467
	NATURAL GAS	CU.M	223 658	29 398
	SAND & GRAVEL	TONNE	999	3 180
	STONE	TONNE	1 026	4 821
				50 866
RM OF HALTON	CLAY IN BRICK	BRICK	X	X
	CLAY IN OTHER PRODCT	N/A	N/A	X
	CLAY IN TILE	TILE	X	X
	LIME	TONNE	X	X
	PETROLEUM	CU.M	..	..
	SAND & GRAVEL	TONNE	1 132	2 643
	STONE	TONNE	12 241	58 000
				106 463

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
RM OF HAMILTON-WENTWORTH	CLAY IN BRICK	BRICK	X	X
	SAND & GRAVEL	TONNE	154	421
	STONE	TONNE	X	X
				26 896
RM OF NIAGARA	NATURAL GAS	CU.M	9 046	1 189
	PEAT	TONNE	X	X
	SAND & GRAVEL	TONNE	X	X
	STONE	TONNE	4 664	26 191
				32 665
RM OF OTTAWA-CARLETON	CLAY IN BRICK	BRICK	X	X
	SAND & GRAVEL	TONNE	2 780	7 197
	STONE	TONNE	X	X
				36 522
RM OF PEEL	CEMENT	TONNE	X	X
	CLAY IN BRICK	BRICK	X	X
	SAND & GRAVEL	TONNE	6 799	30 460
	STONE	TONNE	181	302
				223 722
RM OF SUDBURY	COBALT	KG	2 039	38 156
	COPPER	KG	134 146	324 902
	GOLD	G	1 762	33 543
	NICKEL	KG	130 171	869 315
	PLATINUM GROUP	KG	10	167 754
	SAND & GRAVEL	TONNE	2 203	4 815
	SELENIUM	KG	45	845
	SILVER	KG	53	16 262
	STONE	TONNE	8	81
	SULPHUR	TONNE	256	24 012
	TELLURIUM	KG	1	31
				1 479 716

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

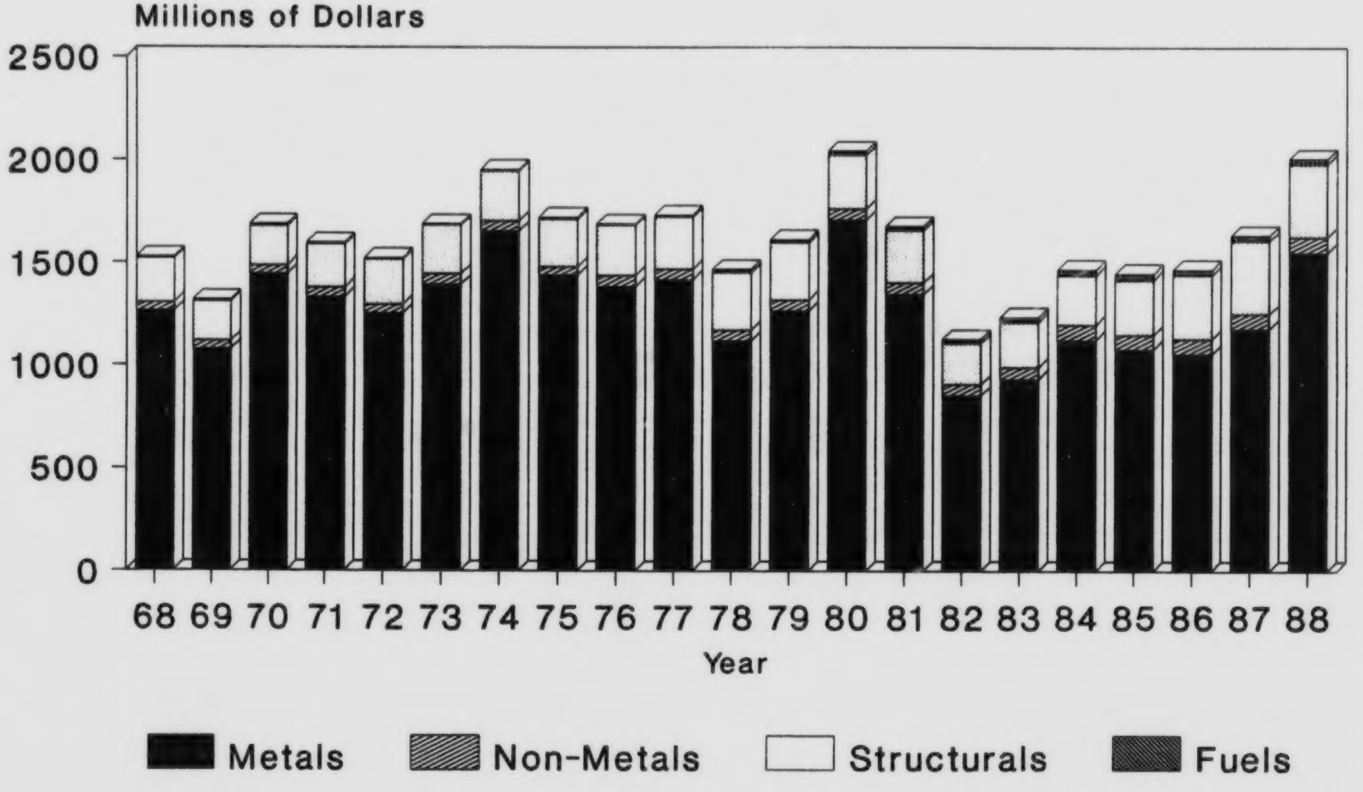
MUNICIPALITY	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
RM OF WATERLOO	CLAY IN OTHER PRODCT	N/A	N/A	X
	SAND & GRAVEL	TONNE	X	X
				21 478
RM OF YORK	CLAY IN BRICK	BRICK	X	X
	SAND & GRAVEL	TONNE	X	X
				23 659
UC OF LEEDS AND GRENVILLE	SAND & GRAVEL	TONNE	910	2 229
	STONE	TONNE	925	4 527
				6 756
UC OF PRESCOTT AND RUSSELL	SAND & GRAVEL	TONNE	143	248
	STONE	TONNE	569	1 987
				2 235
UC OF STORMONT, DUNDAS AND GLENGARRY	SAND & GRAVEL	TONNE	583	1 542
	STONE	TONNE	1 767	7 842
				9 384
GRAND TOTAL				5 588 587

NOTE: THE VALUE OF LIME + CEMENT EXCLUDE THE VALUE OF STONE USED TO PRODUCE THE LIME + CEMENT.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF PRODUCTION
BY
MINING DIVISIONS

VALUE OF MINERAL PRODUCTION IN ONTARIO BY COMMODITY GROUPS, 1968 - 1988
(IN 1971 CONSTANT DOLLARS)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MINING DIVISION	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
KENORA	SAND & GRAVEL	TONNE	1 055	1 413
	STONE	TONNE	415	4 114
				5 527
LARDER LAKE	BARITE	TONNE	X	X
	GOLD	G	3 573	68 005
	IRON ORE	TONNE	X	X
	LIZARDITE FILLER	TONNE	X	X
	SAND & GRAVEL	TONNE	1 139	3 201
	SILVER	KG	18	5 441
				121 655
PATRICIA	COPPER	KG	2 867	6 944
	GOLD	G	127	2 408
	LEAD	KG	4 279	4 526
	SAND & GRAVEL	TONNE	164	162
	SILVER	KG	61	18 836
	STONE	TONNE	432	3 389
	SULPHUR	TONNE	16	1 493
	ZINC	KG	66 143	84 267
				122 025
PORCUPINE	CADMIUM	KG	X	X
	COPPER	KG	X	X
	GOLD	G	12 293	232 123
	LEAD	KG	X	X
	PLATINUM GROUP	KG	X	X
	SAND & GRAVEL	TONNE	2 213	4 073
	SELENIUM	KG	X	X
	SILVER	KG	258	79 650
	STONE	TONNE	1 286	7 825
	SULPHUR	TONNE	X	X
	TALC	TONNE	X	X
	ZINC	KG	X	X
				841 602

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MINING DIVISION	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
RED LAKE	GOLD	G	9 402	182 153
	SAND & GRAVEL	TONNE	287	420
	SILVER	KG	1	277
				182 850
SAULT STE MARIE	GOLD	G	X	X
	IRON ORE	TONNE	X	X
	LIME	TONNE	260	17 356
	SAND & GRAVEL	TONNE	987	2 190
	SILVER	KG	..	83
	STONE	TONNE	..	5
	URANIUM	KG	4 901	581 294
	YTTRIUM	KG	X	X
				672 987
SOUTHERN ONTARIO	CALCIUM	KG	X	X
	CEMENT	TONNE	X	X
	CLAY IN BRICK	BRICK	473 936	114 780
	CLAY IN FLUE LINING	M	X	X
	CLAY IN OTHER PRODCT	N/A	N/A	1 404
	CLAY IN SEWER PIPE	M	X	X
	CLAY IN TILE	TILE	1 809	398
	GYPSUM	TONNE	1 468	16 547
	LIME	TONNE	1 341	91 130
	MAGNESIUM	KG	X	X
	MAGNETITE	TONNE	X	X
	NATURAL GAS	CU.M	511 327	67 209
	NEPHELINE SYENITE	TONNE	506	20 664
	PEAT	TONNE	X	X
	PETROLEUM	CU.M	136	20 720
	SALT	TONNE	5 690	139 326
	SAND & GRAVEL	TONNE	83 660	269 566
	STONE	TONNE	57 377	248 602
	SULPHUR	TONNE	X	X
	TALC	TONNE	X	X
	TREMOLITE	TONNE	X	X
				1 464 269

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF ONTARIO MINERAL COMMODITY PRODUCTION IN 1987

MINING DIVISION	MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE IN 000'S
SUDBURY	COBALT	KG	2 039	38 156
	COPPER	KG	134 430	325 589
	GOLD	G	2 016	38 366
	IRON ORE	TONNE	X	X
	NICKEL	KG	130 171	869 315
	PLATINUM GROUP	KG	10	167 754
	QUARTZ	TONNE	X	X
	SAND & GRAVEL	TONNE	3 775	8 533
	SELENIUM	KG	X	X
	SILVER	KG	53	16 274
	STONE	TONNE	1 762	6 380
	SULPHUR	TONNE	256	24 012
	TELLURIUM	KG	X	X
				1 566 664
THUNDER BAY	CADMIUM	KG	X	X
	COPPER	KG	X	X
	GEMSTONES	TONNE	..	249
	GOLD	G	24 423	469 323
	LEAD	KG	X	X
	SAND & GRAVEL	TONNE	2 842	5 132
	SILVER	KG	47	14 541
	STONE	TONNE	432	1 766
	SULPHUR	TONNE	13	1 194
	ZINC	KG	X	X
				611 008
GRAND TOTAL				5 588 587

NOTE: THE VALUE OF LIME + CEMENT EXCLUDE THE VALUE OF STONE USED TO PRODUCE THE LIME + CEMENT.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF MINERAL PRODUCTION IN ONTARIO AND CANADA

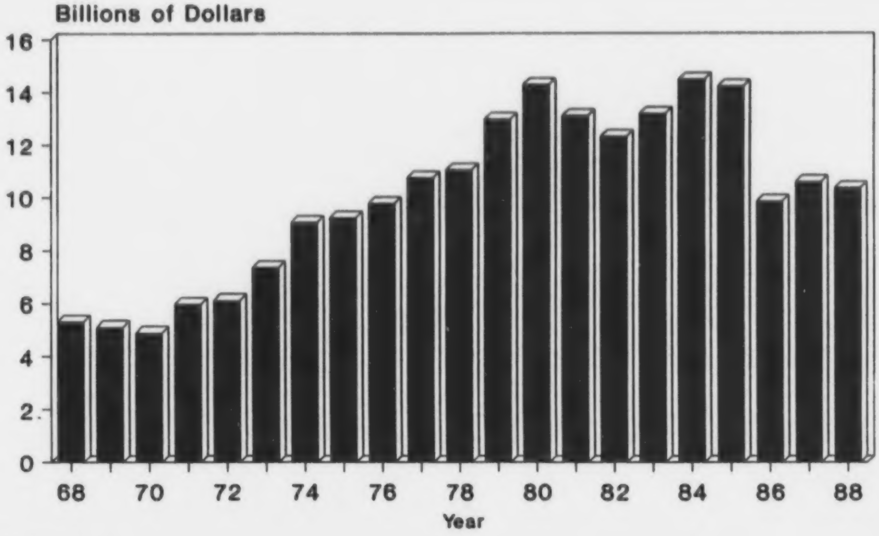
VALUE OF PRODUCTION OF ALL MINERALS IN CANADA

	VALUE OF PRODUCTION IN 000'S		
YEAR	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS
1968	4 720 162	5 321 490	19 040 291
1969	4 733 222	5 105 957	18 269 113
1970	4 731 180	4 887 582	17 487 769
1971	5 962 465	5 962 465	21 333 699
1972	6 407 793	6 108 478	21 856 133
1973	8 365 938	7 357 905	26 326 584
1974	11 711 004	9 050 235	32 381 742
1975	13 524 125	9 231 485	33 030 252
1976	15 689 677	9 781 594	34 998 543
1977	18 472 943	10 758 849	38 495 160
1978	20 205 144	11 059 192	39 569 788
1979	26 081 891	12 995 461	46 497 761
1980	31 841 758	14 298 050	51 158 424
1981	32 340 807	13 130 657	46 981 489
1982	33 837 022	12 340 271	44 153 488
1983	38 380 683	13 211 939	47 272 318
1984	43 692 646	14 506 190	51 903 150
1985	44 638 245	14 238 675	50 945 978
1986	32 451 921	9 857 813	35 271 255
1987 (R)	36 294 806	10 600 119	37 927 224
1988 (P)	37 097 593	10 368 248	37 097 593
TOTAL		210 172 655	751 997 754

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VALUE OF MINERAL PRODUCTION IN CANADA

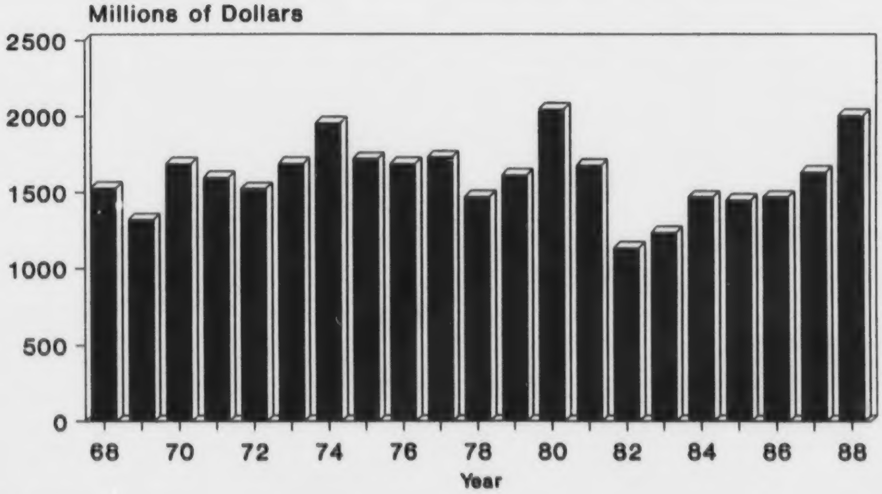
(IN 1971 CONSTANT $)



'88 - Preliminary

VALUE OF MINERAL PRODUCTION IN ONTARIO

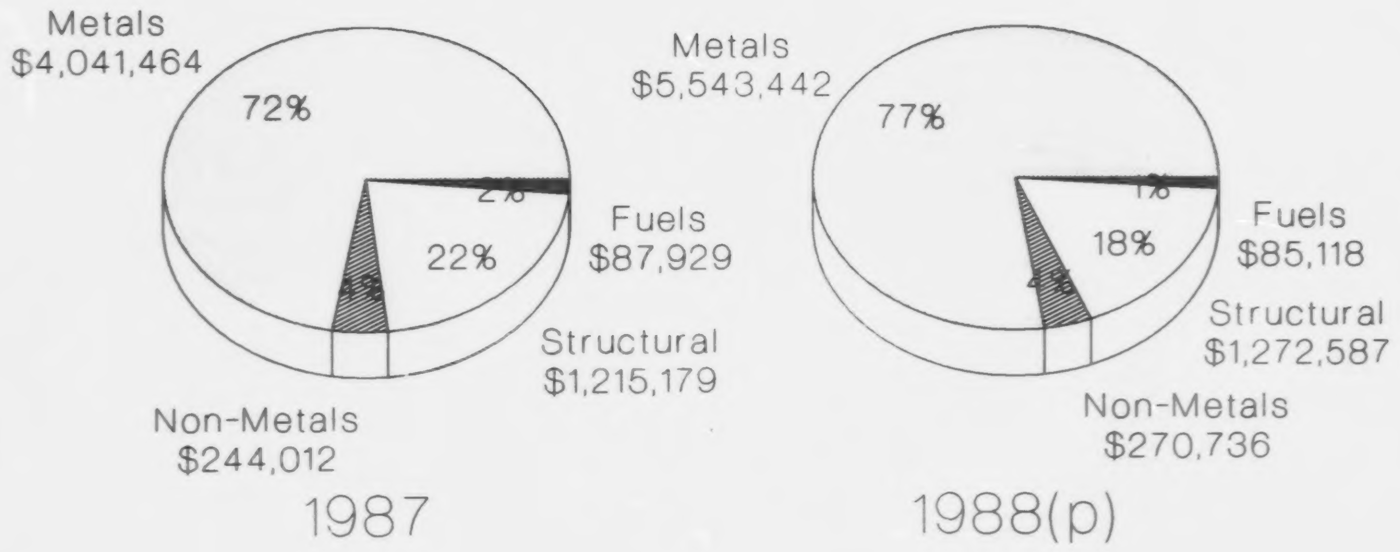
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

Total Mineral Production in Ontario in Thousands of Current Dollars

1987 and 1988(p)



p - preliminary
Source:Information & Statistics Section
MNDM

VALUE OF PRODUCTION OF ALL MINERALS IN ONTARIO

	VALUE OF PRODUCTION IN 000'S		
YEAR	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS
1968	1 355 580	1 528 275	5 468 169
1969	1 223 346	1 319 683	4 721 827
1970	1 635 066	1 689 118	6 043 664
1971	1 598 770	1 598 770	5 720 399
1972	1 598 837	1 524 154	5 453 421
1973	1 919 903	1 688 569	6 041 701
1974	2 526 950	1 952 821	6 987 193
1975	2 521 439	1 721 119	6 158 163
1976	2 709 039	1 688 927	6 042 981
1977	2 974 270	1 732 248	6 197 983
1978	2 682 787	1 468 411	5 253 975
1979	3 239 949	1 614 325	5 776 053
1980	4 551 766	2 043 900	7 313 076
1981	4 130 872	1 677 171	6 000 918
1982	3 100 053	1 130 581	4 045 218
1983	3 588 443	1 235 264	4 419 776
1984	4 420 325	1 467 571	5 250 970
1985	4 535 694	1 446 792	5 176 623
1986 (R)	4 828 841	1 466 841	5 248 357
1987 (R)	5 588 584	1 632 180	5 839 940
1988 (P)	7 171 883	2 004 439	7 171 883
TOTAL		33 631 159	120 332 290

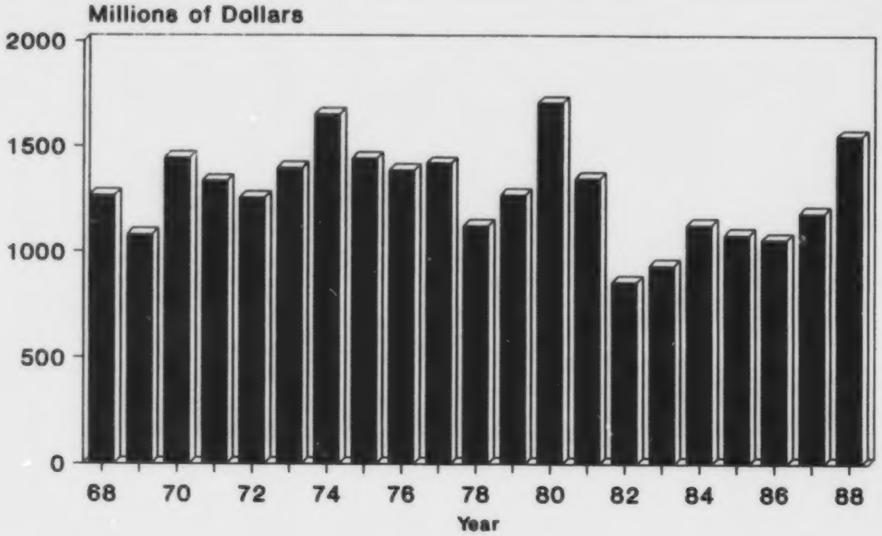
SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VALUE OF PRODUCTION OF METALS IN ONTARIO

	VALUE OF PRODUCTION IN 000'S		
YEAR	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS
1968	1 122 956	1 266 016	4 529 805
1969	1 001 021	1 079 850	3 863 704
1970	1 399 337	1 445 596	5 172 344
1971	1 335 245	1 335 245	4 777 507
1972	1 315 627	1 254 173	4 487 431
1973	1 587 040	1 395 813	4 994 220
1974	2 140 973	1 654 539	5 919 940
1975	2 113 116	1 442 400	5 160 907
1976	2 223 006	1 385 914	4 958 801
1977	2 435 987	1 418 746	5 076 273
1978	2 049 316	1 121 684	4 013 384
1979	2 544 644	1 267 884	4 536 490
1980	3 809 165	1 710 447	6 119 978
1981	3 319 635	1 347 801	4 822 433
1982	2 349 337	856 797	3 065 619
1983	2 720 794	936 590	3 351 119
1984	3 392 098	1 126 195	4 029 525
1985	3 385 984	1 080 059	3 864 450
1986	3 479 849	1 057 062	3 782 168
1987 (R)	4 041 464	1 180 334	4 223 235
1988 (P)	5 543 442	1 549 313	5 543 442
TOTAL		26 912 458	96 292 775

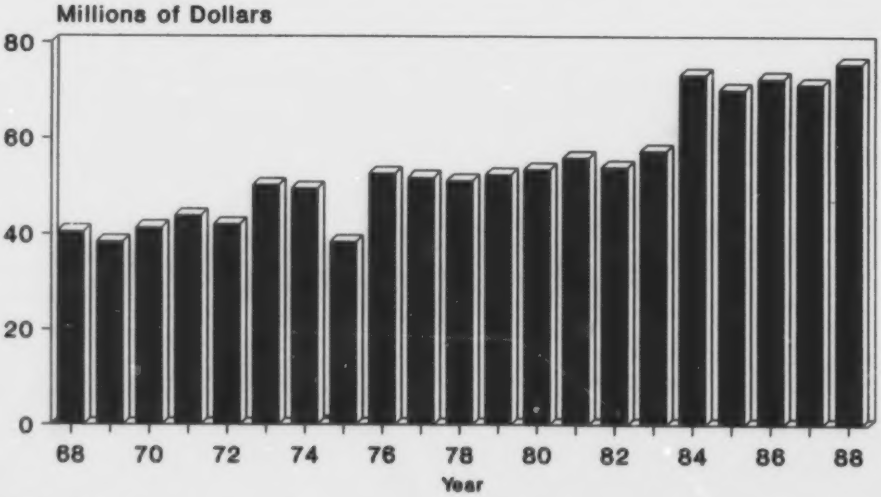
SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VALUE OF METALLIC MINERAL PRODUCTION IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary

VALUE OF NON-METALLIC MINERAL PRODUCTION IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

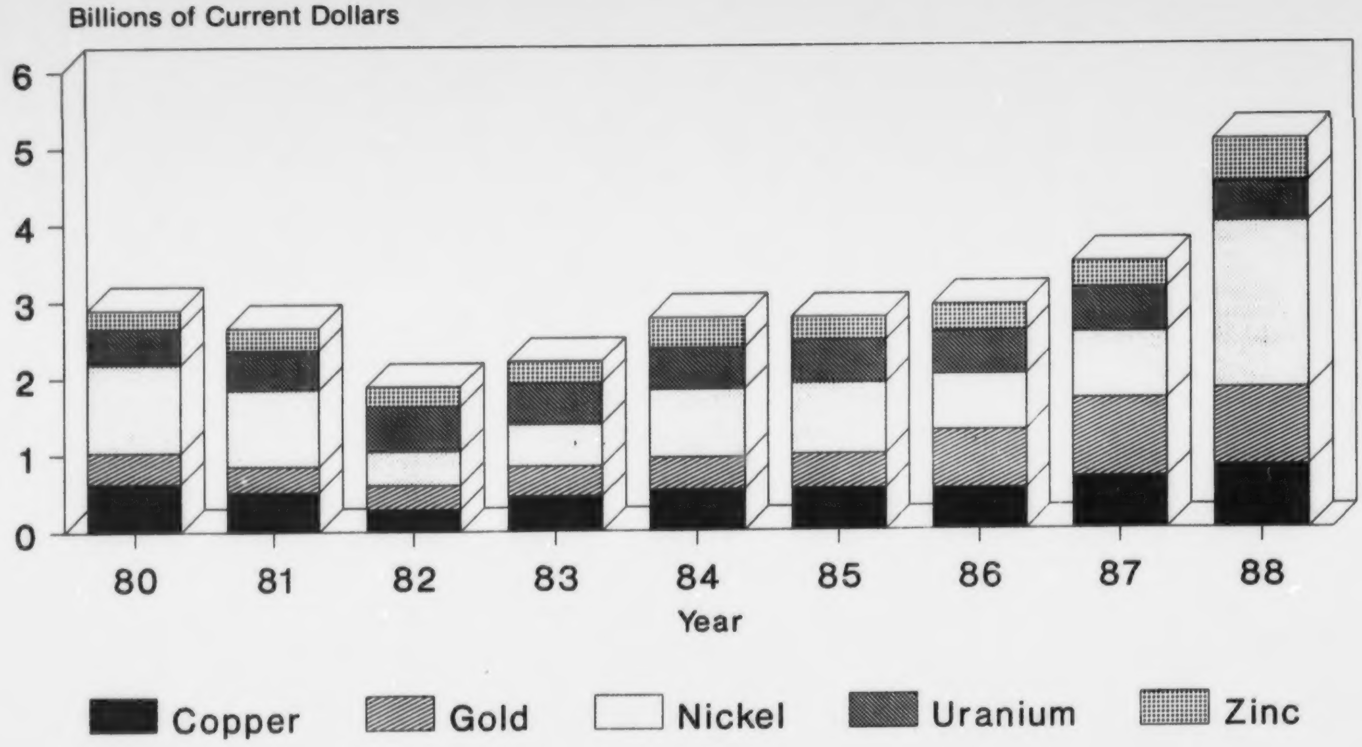
VALUE OF PRODUCTION OF NON-METALS IN ONTARIO

	VALUE OF PRODUCTION IN 000'S		
YEAR	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS
1968	35 944	40 524	144 993
1969	35 638	38 444	137 552
1970	40 046	41 370	148 022
1971	43 876	43 876	156 989
1972	44 134	42 073	150 536
1973	57 205	50 312	180 016
1974	64 184	49 601	177 474
1975	56 186	38 352	137 224
1976	84 507	52 685	188 508
1977	89 178	51 938	185 835
1978	93 721	51 298	183 544
1979	105 361	52 497	187 833
1980	119 202	53 526	191 515
1981	137 905	55 991	200 335
1982	148 266	54 072	193 471
1983	166 860	57 439	205 517
1984	220 788	73 303	262 277
1985	220 139	70 220	251 246
1986	238 881	72 564	259 634
1987 (R)	244 012	71 265	254 987
1988 (P)	270 736	75 667	270 736
TOTAL		1 137 017	4 068 244

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VALUE OF MAJOR MINERAL PRODUCTION IN ONTARIO

1980 - 1988



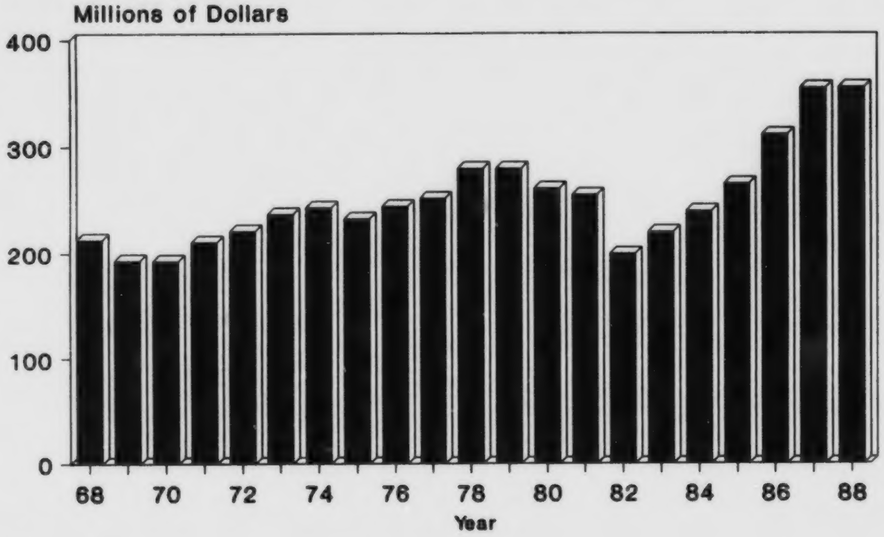
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VALUE OF PRODUCTION OF STRUCTURAL MATERIALS IN ONTARIO

	VALUE OF PRODUCTION IN 000'S		
YEAR	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS
1968	188 914	212 981	762 044
1969	179 295	193 415	692 038
1970	186 355	192 515	688 820
1971	210 589	210 589	753 486
1972	231 809	220 981	790 670
1973	269 115	236 689	846 873
1974	314 203	242 815	868 792
1975	340 583	232 480	831 813
1976	391 450	244 046	873 197
1977	432 211	251 725	900 670
1978	510 207	279 260	999 191
1979	560 266	279 156	998 820
1980	580 131	260 499	932 065
1981	627 664	254 837	911 807
1982	546 328	199 244	712 896
1983	638 748	219 879	786 726
1984	721 696	239 607	857 314
1985	831 691	265 292	949 215
1986 (R)	1 024 499	311 209	1 113 817
1987 (R)	1 215 179	354 900	1 269 834
1988 (P)	1 272 587	355 670	1 272 587
TOTAL		5 257 789	18 812 675

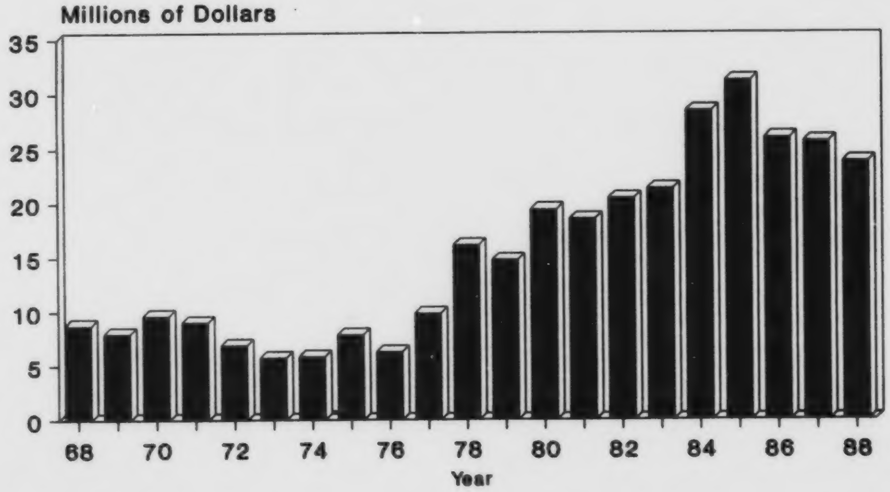
SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VALUE OF STRUCTURAL MATERIALS PRODUCTION IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary

VALUE OF FUELS PRODUCTION IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

VALUE OF PRODUCTION OF FUELS IN ONTARIO

YEAR	VALUE OF PRODUCTION IN 000'S CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS
1968	7 766	8 755	31 326
1969	7 392	7 974	28 532
1970	9 328	9 636	34 478
1971	9 060	9 060	32 416
1972	7 266	6 927	24 784
1973	6 544	5 755	20 592
1974	7 590	5 866	20 987
1975	11 554	7 887	28 219
1976	10 076	6 282	22 476
1977	16 894	9 839	35 205
1978	29 543	16 170	57 856
1979	29 679	14 788	52 911
1980	43 269	19 429	69 517
1981	45 668	18 542	66 342
1982	56 122	20 467	73 232
1983	62 041	21 357	76 414
1984	85 742	28 467	101 855
1985	97 880	31 222	111 712
1986	85 612	26 006	93 050
1987 (R)	87 929	25 680	91 884
1988 (P)	85 118	23 789	85 118
TOTAL		323 898	1 158 906

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

CADMIUM

In Ontario, cadmium is recovered as a by-product of zinc refining. Cadmium production is dependent on zinc production, the cadmium content of the ore, the grade of zinc, and the smelting and refining processes used. Its recovery from zinc residues is driven by demand.

The main use for cadmium is the production nickel-cadmium rechargeable batteries. This use accounts for some 36% of total world consumption. Other uses include coatings of iron and steel products and the manufacture of pigments and chemicals.

In 1987, Ontario produced 760 tonnes of cadmium or 53% of Canada's total cadmium output. Production remained the same from 1986.

Production increased significantly in 1967 with the discovery of Texasgulf's zinc-copper deposit (now Falconbridge's Kidd Creek mine). Average annual production from 1967-1973 was 1,162 tonnes compared with 697 tonnes from 1974-1987. The decrease is attributed to a significant drop in production from the Kidd Creek deposit in 1974.

Canada ranks fourth in the world after the U.S.S.R., Japan and the United States producing about 8% of the world's cadmium in 1987. Over 85% of Canada's refined cadmium is exported, mainly to the United States, United Kingdom and the Netherlands.

The price of cadmium has increased from Cdn$3.82 per kilogram in 1986 to Cdn$19.08 per kilogram in 1988. A tight market and increasing demand for the metal from Japan and the Soviet Union are the reasons attributed to the increase in price.

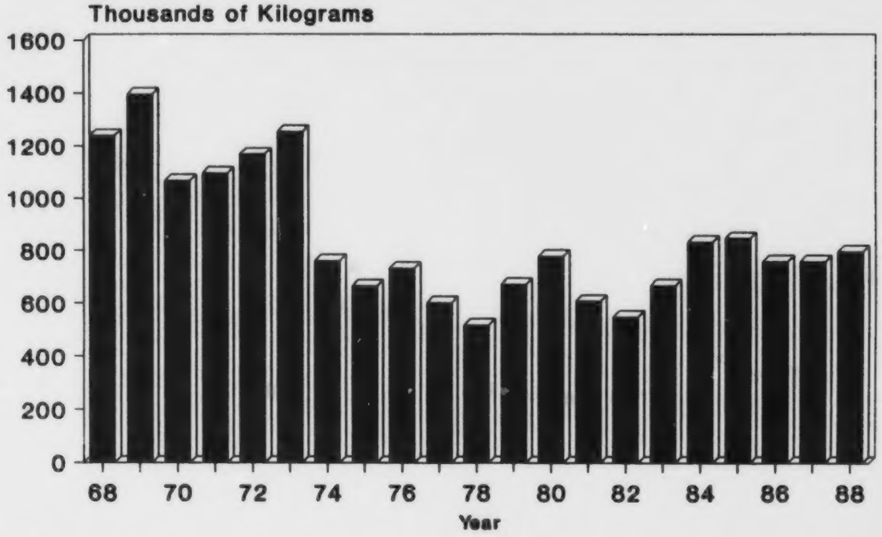
In the table, cadmium production represents the refining of zinc by Cominco Ltd. in Trail, British Columbia; Hudson Bay Mining and Smelting Co. Ltd. in Flin Flon, Manitoba; Kidd Creek Mines Ltd. in Timmins, Ontario; and Canadian Electrolytic Zinc Ltd. in Valleyfield, Quebec.

VOLUME AND VALUE OF PRODUCTION OF CADMIUM IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	2 733	1 240	7 788	8 780	31 417	25.35
1969	3 076	1 395	10 826	11 678	41 785	29.95
1970	2 351	1 067	8 371	8 647	30 940	29.01
1971	2 414	1 095	4 683	4 683	16 756	15.30
1972	2 575	1 168	6 515	6 211	22 223	19.02
1973	2 765	1 254	10 063	8 851	31 669	25.25
1974	1 680	762	6 681	5 163	18 475	24.24
1975	1 468	666	5 011	3 421	12 240	18.38
1976	1 618	734	4 247	2 648	9 474	12.91
1977	1 329	603	4 188	2 439	8 727	14.47
1978	1 142	518	3 192	1 747	6 250	12.07
1979	1 483	673	4 796	2 389	8 550	12.71
1980	1 718	779	5 283	2 372	8 489	10.89
1981	1 343	609	2 959	1 202	4 299	7.06
1982	1 210	549	1 823	665	2 379	4.33
1983	1 474	668	1 638	564	2 017	3.02
1984	1 839	834	3 116	1 035	3 702	4.44
1985	1 870	848	2 586	825	2 951	3.48
1986	1 675	760	2 904	882	3 156	4.16
1987 (R)	1 675	760	3 827	1 118	3 999	5.26
1988 (P)	1 756	797	15 009	4 195	15 009	18.84
TOTAL	39 194	17 779		79 515	284 507	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF CADMIUM
IN ONTARIO



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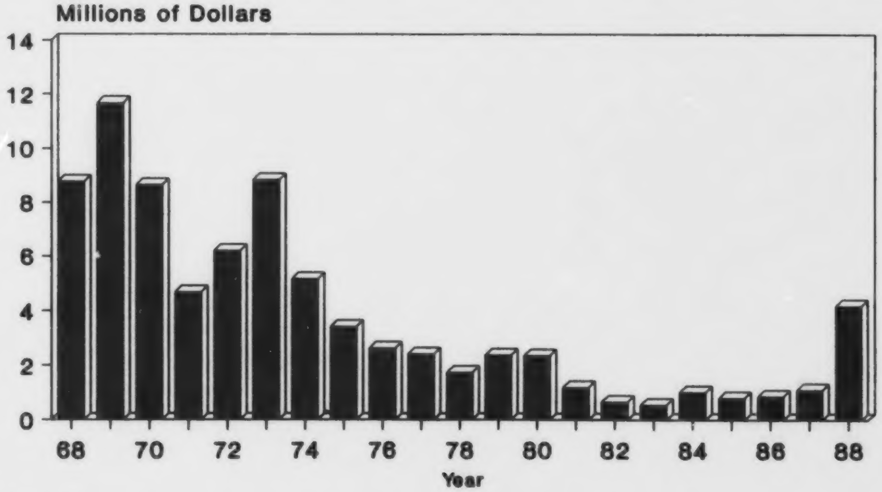
VALUE OF PRODUCTION OF CADMIUM IN ONTARIO
(IN 1971 CONSTANT $)



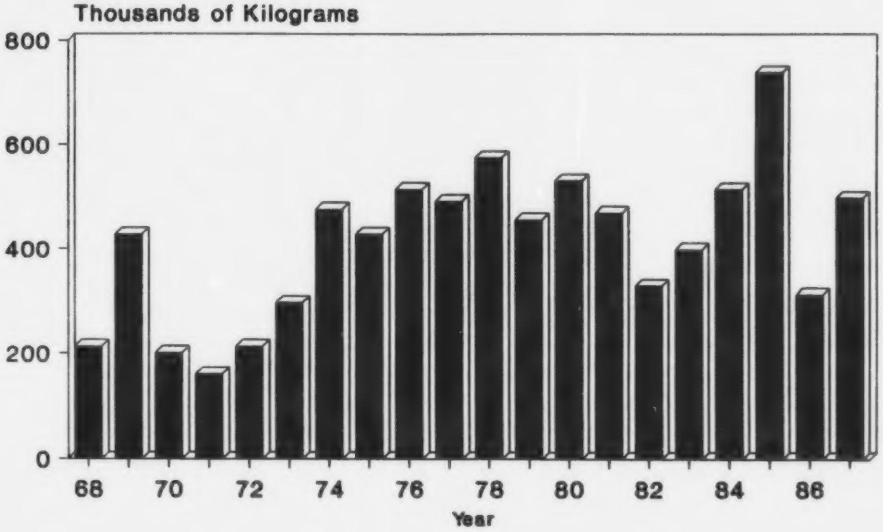
'88 - Preliminary
Source: Information & Statistics Section
Ministry of Northern Dev. & Mines

VOLUME AND VALUE OF PRODUCTION OF CALCIUM IN ONTARIO

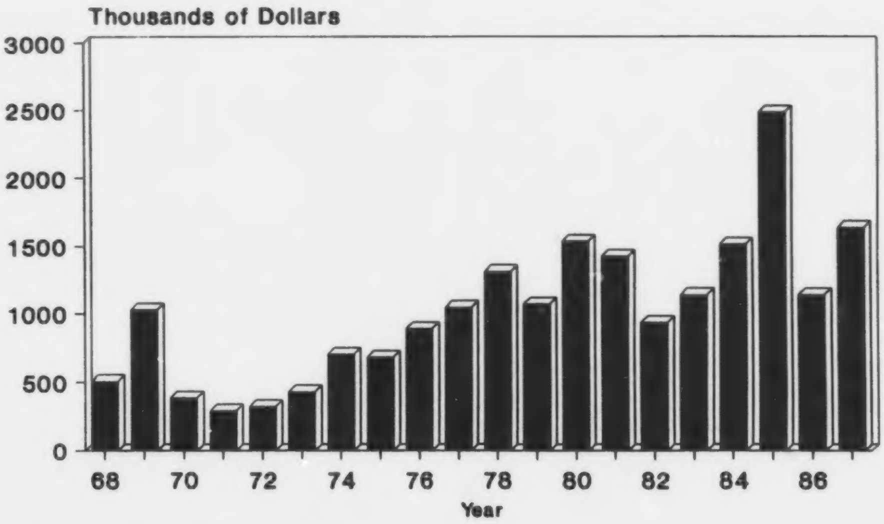
	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	469	213	451	508	1 819	8.56
1969	943	428	954	1 029	3 680	8.61
1970	444	201	374	387	1 384	6.88
1971	355	161	292	292	1 043	6.47
1972	469	213	338	322	1 152	5.41
1973	652	296	490	431	1 541	5.21
1974	1 050	476	915	707	2 531	5.32
1975	944	428	1 005	686	2 454	5.73
1976	1 133	514	1 433	893	3 195	6.22
1977	1 082	491	1 802	1 049	3 754	7.65
1978	1 267	575	2 397	1 312	4 695	8.17
1979	1 005	456	2 152	1 072	3 837	8.42
1980	1 170	531	3 422	1 536	5 497	10.36
1981	1 035	469	3 512	1 426	5 102	10.87
1982	726	329	2 567	936	3 350	10.18
1983	880	399	3 306	1 138	4 072	10.21
1984	1 136	515	4 560	1 514	5 416	10.51
1985	1 628	739	7 789	2 485	8 890	12.04
1986	687	312	3 743	1 137	4 069	13.05
1987 (R)	1 097	498	5 601	1 636	5 853	11.76
1988 (P)	X	X	X	X	X	X
TOTAL	18 172	8 244		20 496	73 334	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF CALCIUM
IN ONTARIO



VALUE OF PRODUCTION OF CALCIUM IN ONTARIO
(IN 1971 CONSTANT $)



Source: Information & Statistics Section
MNDM

CALCIUM

Calcium is a highly reactive metal, produced in Ontario by Timminco Limited, near Haley Station. Production commenced in 1945 but it wasn't until the 1970's that any large scale commercial production of calcium began. With the distinction of being one of the four producers in the world and one of two in North America, the Haley plant is the major supplier of calcium in North America and Europe.

From 1986 to 1987, calcium production increased by almost 60 % to 498 000 kg. In this same period the value of calcium increased by 49.6 % to over $5.6 million. Two major calcium products are calcium metal and calcium chloride.

Calcium metal is utilized in the production of maintenance-free batteries, the refining of lead-free gasoline and in steel making applications. The introduction of maintenance-free batteries in North America and their growing interest in Europe and Japan has resulted in a significant increase in demand for calcium.

Calcium chloride is used primary as a road de-icing agent, road base stabilizer and for dust control.

The continued growth of the Western economies demand for calcium metal in industrial applications should guarantee the continued market for this metal over the next decade.

In the accompanying table, output figures represent calcium metal, plus calcium content of alloys

CEMENT

In 1987, the demand for cement in Canada continued to follow an upward trend due mainly to its direct relationship with the commercial and residential construction industry. Cement is used primarily in the production of concrete, a widely used building material. The industry is strongly regionalized, thereby locating its operations in areas of high growth and accessibility to markets in Canada and the United States.

In Canada, the largest aggregate operations are owned and operated by 10 Canadian cement operators, who collectively operate 22 cement plants with a total production capacity of 14 million tonnes. Ontario's cement operations are controlled primarily by 4 major companies; St. Lawrence Cement, St. Mary's Cement Co., Lafarge Canada Inc. and Lake Ontario Cement Ltd. These 4 companies operate 6 cement manufacturing plants and 76 ready-mix operations in the Province. Foreign ownership plays a major part in the Canadian cement industry, accounting for 83% of total ownership. St. Mary's Cement Co. is the only privately owned operation in Ontario.

Ontario's cement production in 1987 totaled over 5.4 million tonnes at a value of nearly 420 million dollars, representing a 14% increase in production volume and 27% increase in value over 1986. 44% of the cement produced in Canada during 1987 came from Ontario sources.

Over the past 15 years Canadian cement companies have concentrated on diversification and vertical integration, acquiring and continuing to acquire a large number of privately-owned aggregate, ready-mix and asphalt operations. The Canadian cement industry's increased production efficiency, acquisition of storage and distribution facilities and clinker grinding plants in the United States has significantly improved Canadian producers' market position, resulting in increased exports.

Although housing starts decreased by 9% in Ontario during 1988 over 1987, the non-residential construction sector is expected to continue to experience growth. The demand for cement should follow a similar trend.

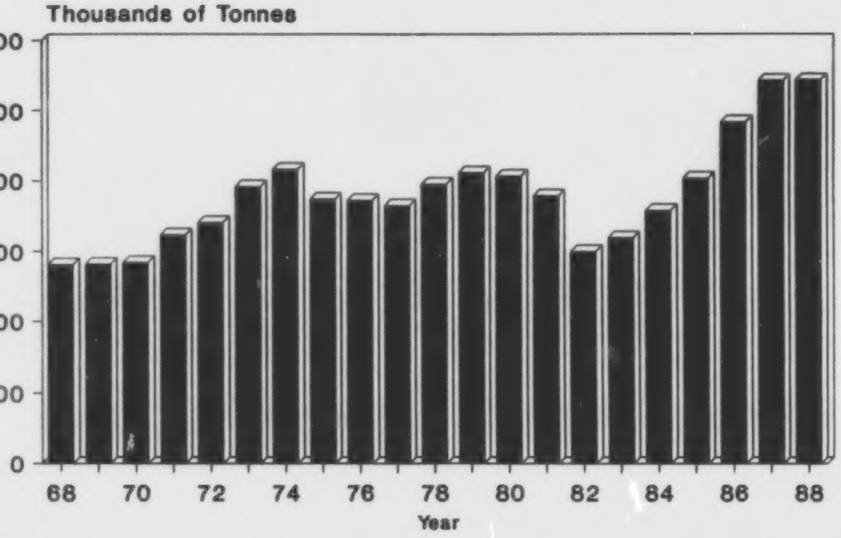
In the accompanying table, production figures represent quantities shipped. Value is as reported by the producer.

VOLUME AND VALUE OF PRODUCTION OF CEMENT IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S SHORT TONS	TONNE	VALUE OF PRODUCTION IN 000'S CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	UNIT VALUE 1988 DOLLARS/TONNE
1968	3 104	2 816	53 684	60 523	216 551	76.91
1969	3 113	2 824	56 650	61 111	218 656	77.43
1970	3 143	2 851	58 482	60 415	216 164	75.82
1971	3 570	3 239	68 300	68 300	244 378	75.45
1972	3 761	3 412	76 213	72 653	259 954	76.19
1973	4 319	3 918	86 610	76 174	272 551	69.56
1974	4 592	4 166	102 390	79 127	283 117	67.96
1975	4 119	3 737	110 922	75 715	270 908	72.50
1976	4 101	3 720	126 124	78 631	281 341	75.63
1977	4 020	3 647	138 795	80 836	289 231	79.30
1978	4 355	3 951	160 206	87 688	313 748	79.41
1979	4 538	4 117	182 252	90 808	324 912	78.92
1980	4 483	4 067	190 793	85 673	306 537	75.37
1981	4 175	3 787	205 063	83 257	297 894	78.66
1982	3 315	3 007	185 047	67 486	241 466	80.29
1983	3 528	3 201	212 263	73 068	261 438	81.68
1984	3 949	3 583	225 320	74 808	267 661	74.71
1985	4 457	4 044	265 048	84 545	302 502	74.81
1986	5 338	4 843	329 021	99 945	357 605	73.84
1987 (R)	5 987	5 432	419 713	122 580	438 590	80.75
1988 (P)	5 997	5 441	449 025	125 496	449 025	82.53
TOTAL	87 964	79 803		1 708 839	6 114 229	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF CEMENT
IN ONTARIO



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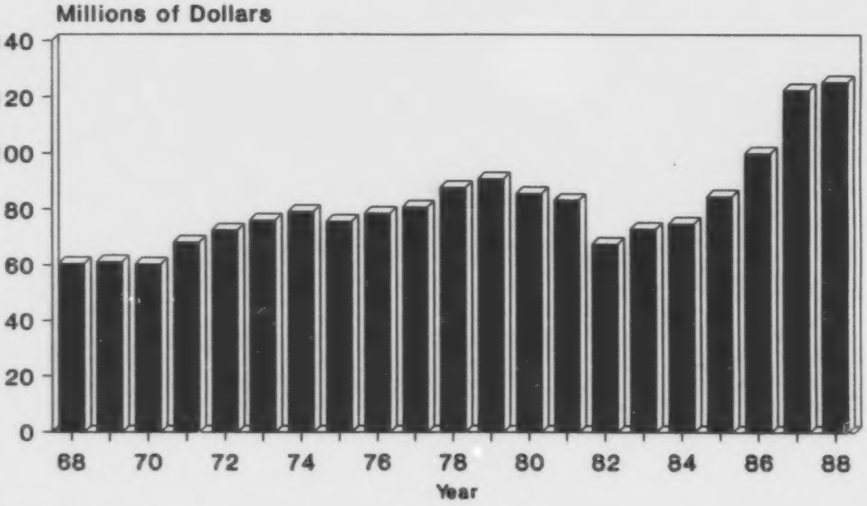
VALUE OF PRODUCTION OF CEMENT IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

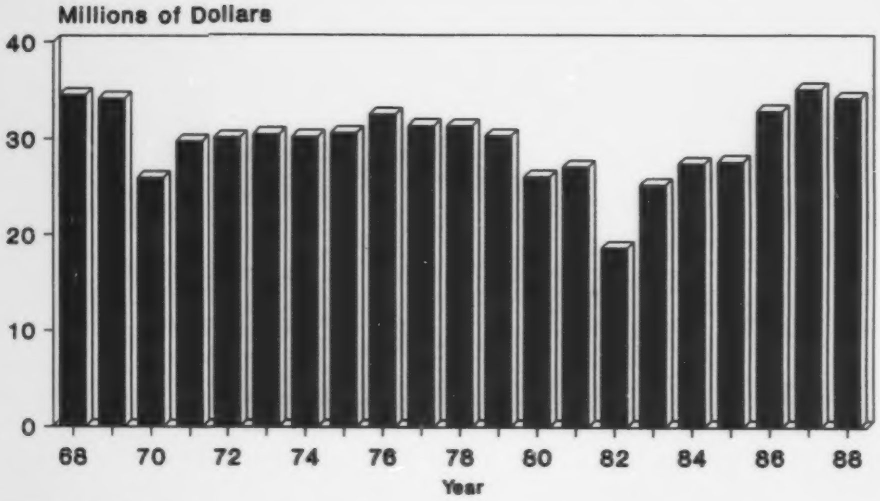
VALUE OF PRODUCTION OF CLAY PRODUCTS
IN ONTARIO

	VALUE OF PRODUCTION IN 000'S		
YEAR	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS
1968	30 629	34 531	123 553
1969	31 673	34 167	122 249
1970	25 197	26 030	93 136
1971	29 815	29 815	106 679
1972	31 570	30 095	107 681
1973	34 601	30 432	108 885
1974	39 074	30 196	108 042
1975	44 769	30 559	109 340
1976	52 117	32 492	116 256
1977	53 784	31 325	112 079
1978	57 142	31 277	111 907
1979	60 767	30 278	108 334
1980	58 110	26 093	93 362
1981	66 660	27 065	96 837
1982	51 131	18 647	66 720
1983	73 297	25 231	90 278
1984	82 671	27 447	98 206
1985	86 654	27 641	98 899
1986	108 067	32 827	117 456
1987 (R)	120 209	35 108	125 616
1988 (P)	122 203	34 154	122 203
TOTAL		625 410	2 237 718

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VALUE OF PRODUCTION OF CLAY PRODUCTION IN ONTARIO

(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

CLAY

In 1987, Ontario continued to remain Canada's largest producer of clay products accounting for 60% of the nation's total value. Value of production reached $120 million in Ontario, representing an increase of 11% from 1986. Production first exceeded $100 million in 1986.

Clay minerals are divided into three main groups: kaolinite, montmorillonite and illite. Illite is the main clay mineral in the shales and clays of Ontario.

The principal users of shales in the Province are the brick manufacturers and producers of quarry tile, drainage tiles, sewer pipes and pottery products. Sources for Ontario shale are the Queenston, Georgian Bay and Arkona Formations located in the Niagara Escarpment and other locations in southern Ontario.

In 1987, there was no commercial production of kaolin in Canada. Cretaceous kaolin clays of the Moose River Basin in northeastern Ontario have potential to be used in ceramic products. In Canada, the pulp and paper industry accounts for over 80% of kaolin consumption followed by the ceramics, rubber, paint and varnish industries.

In 1987, Canada imported $482 million worth of clays. Production from domestic sources by product consists of: bricks (84%), flue linings (5%), drain tile (2%) and other products (9%).

In the table, production represents shipments of brick and other clay products made from domestic clays.

COBALT

Cobalt is recovered as a by-product from nickel-copper production by INCO Limited and Falconbridge Limited at the Sudbury mines. In 1987, Ontario was Canada's largest producer of the metal accounting for 82% of Canada's cobalt output. Production has increased steadily from 966 tonnes in 1982 to 2 039 tonnes in 1987.

Cobalt is used in superalloys, magnets, carbides, paints, glass and ceramics. The price of cobalt was Cdn$18.92 per kilogram in 1987 down from the 1986 price of Cdn$22.85. Price fluctuations in the late 1970s and early 1980s have resulted in the substitution away from cobalt mainly to nickel. Cobalt consumption is expected to increase annually by 1 to 2%.

Historically, cobalt production peaked to over 1 000 tonnes in 1908 and 1909 coinciding with peaks in silver production in the Cobalt camp during the 1908-1913 period. In 1954, production once again exceeded 1 000 tonnes and has remained above that level to this present day except for the years 1963, 1978 and 1982.

Canada is the third largest producer of cobalt in the world after Zaire and Zambia. Approximately 95% of Canada's production is exported, mainly to the United States. In 1986, 96 tonnes of cobalt were consumed in Canada representing about 4% of that year's production.

In the table, production includes:

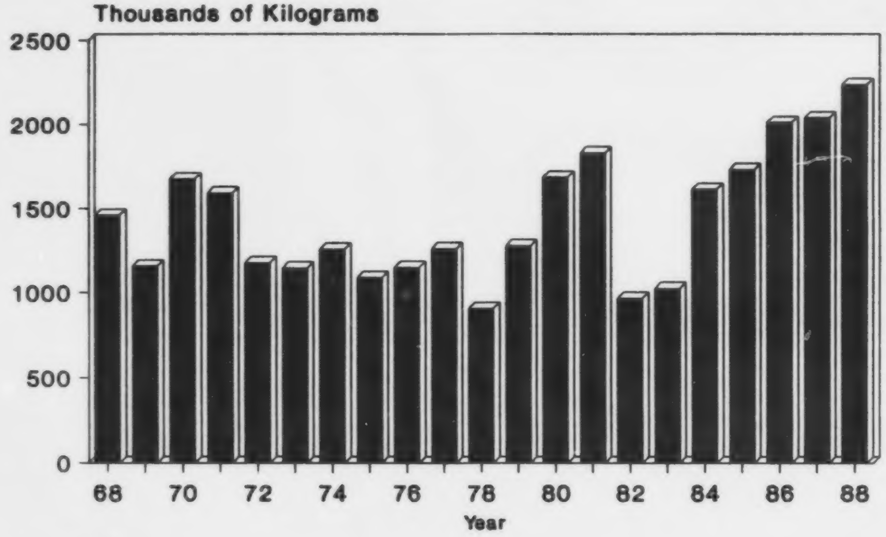
(a) cobalt metal produced at Canadian refineries, plus the cobalt content of salts and oxides made at these refineries. Recoveries from imported concentrates are excluded. The value is the total sales value of these products as reported by the refineries.
(b) cobalt content of ores and concentrates exported and valued at the average yearly industry price times volume.

VOLUME AND VALUE OF PRODUCTION OF COBALT IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	3 221	1 461	6 958	7 844	28 067	19.21
1969	2 554	1 158	5 421	5 848	20 924	18.06
1970	3 693	1 675	8 211	8 483	30 352	18.12
1971	3 511	1 593	7 650	7 650	27 373	17.19
1972	2 594	1 177	6 388	6 089	21 787	18.52
1973	2 528	1 147	6 914	6 081	21 757	18.97
1974	2 775	1 259	8 142	6 292	22 513	17.88
1975	2 400	1 089	10 278	7 016	25 102	23.06
1976	2 533	1 149	10 942	6 822	24 408	21.24
1977	2 785	1 263	16 053	9 349	33 451	26.48
1978	2 000	907	24 026	13 151	47 053	51.88
1979	2 817	1 278	86 300	42 999	153 852	120.39
1980	3 717	1 686	106 901	48 002	171 752	101.87
1981	4 037	1 831	94 392	38 324	137 124	74.88
1982	2 130	966	28 258	10 306	36 874	38.16
1983	2 259	1 025	16 602	5 715	20 448	19.95
1984	3 559	1 614	37 027	12 293	43 985	27.24
1985	3 817	1 731	60 434	19 277	68 973	39.84
1986	4 435	2 012	40 323	12 249	43 826	21.79
1987 (R)	4 496	2 039	38 156	11 144	39 872	19.55
1988 (P)	4 931	2 237	42 494	11 876	42 494	19.00
TOTAL	66 792	30 297		296 810	1 061 987	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF COBALT
IN ONTARIO



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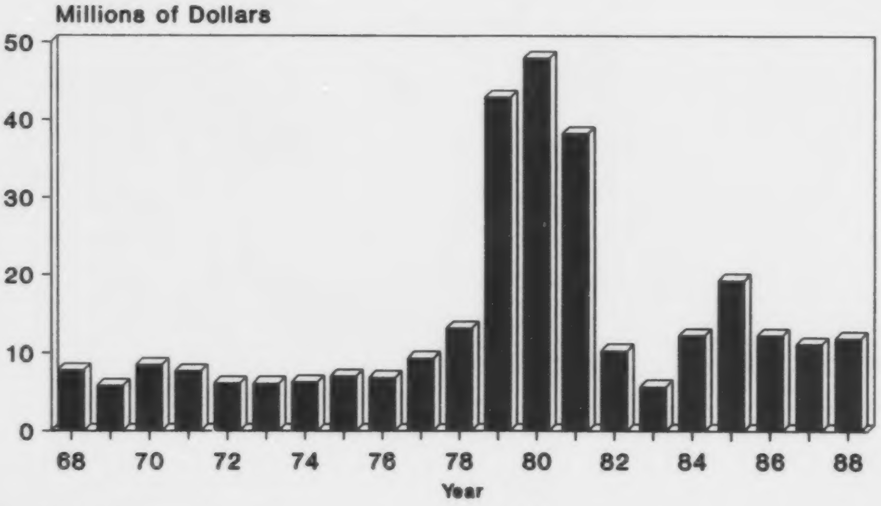
VALUE OF PRODUCTION OF COBALT IN ONTARIO
(IN 1971 CONSTANT $)



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Source: Information & Statistics Section
MNDM

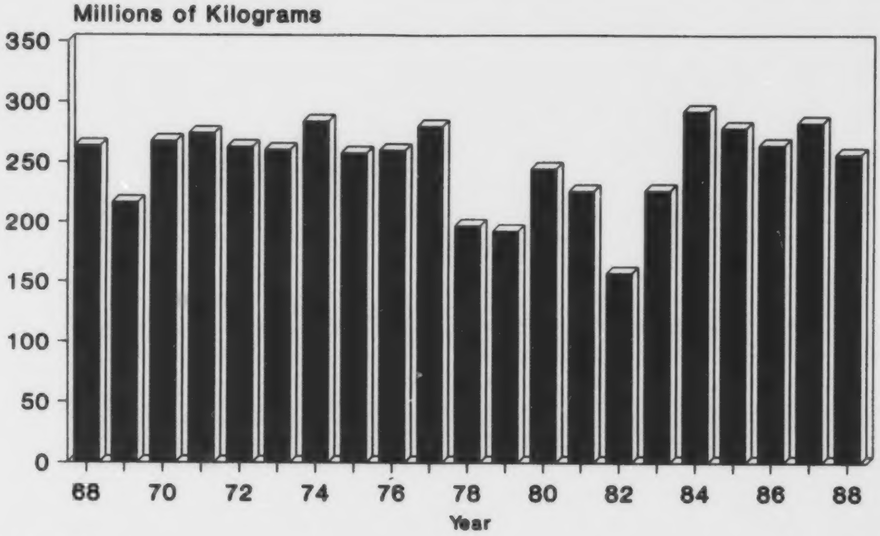
VOLUME AND VALUE OF PRODUCTION OF COPPER IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	581 236	263 644	278 313	313 769	1 122 666	4.26
1969	477 620	216 645	244 301	263 539	942 942	4.35
1970	590 185	267 703	340 840	352 107	1 259 840	4.71
1971	604 740	274 305	317 528	317 528	1 136 115	4.14
1972	579 445	262 832	293 494	279 784	1 001 069	3.81
1973	574 647	260 655	365 306	321 289	1 149 573	4.41
1974	625 886	283 897	483 995	374 030	1 338 280	4.71
1975	568 303	257 778	361 432	246 711	882 733	3.42
1976	573 638	260 198	391 377	244 001	873 035	3.36
1977	617 154	279 936	427 981	249 261	891 855	3.19
1978	434 397	197 039	324 000	177 340	634 522	3.22
1979	425 373	192 946	457 472	227 938	815 563	4.23
1980	540 186	245 024	631 188	283 425	1 014 095	4.14
1981	499 093	226 385	521 020	211 539	756 885	3.34
1982	347 997	157 849	298 008	108 683	388 867	2.46
1983	500 000	226 796	457 349	157 435	563 303	2.48
1984	644 683	292 423	537 391	178 417	638 375	2.18
1985	614 076	278 540	545 235	173 919	622 281	2.23
1986	582 932	264 413	534 006	162 213	580 399	2.20
1987 (R)	623 721	282 915	677 317	197 814	707 780	2.50
1988 (P)	565 769	256 629	824 034	230 306	824 034	3.21
TOTAL	11 571 081	5 248 552		5 071 048	18 144 212	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF COPPER

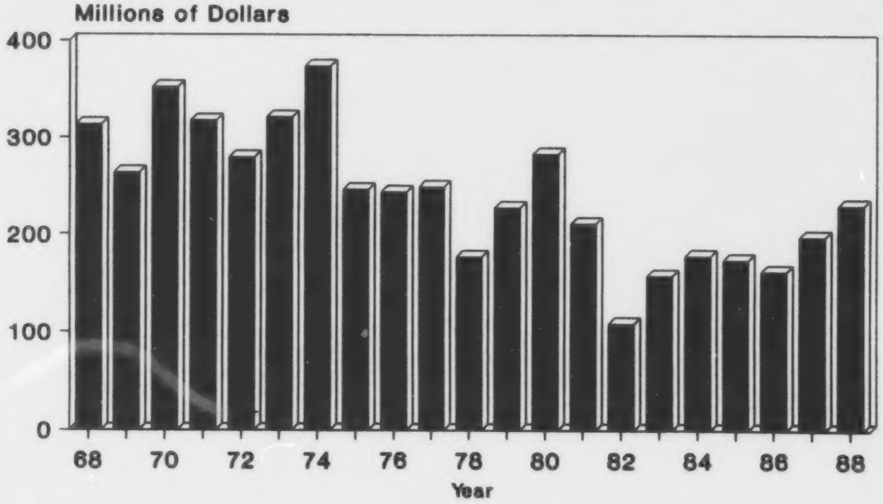
IN ONTARIO



'88 - Preliminary

VALUE OF PRODUCTION OF COPPER IN ONTARIO

(IN 1971 CONSTANT $)



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Source: Information & Statistics Section
MNDM

COPPER

In 1987, copper production in Ontario totaled 282 915 tonnes representing an increase of 7% from 1986. This represents 36% of Canada's total copper production making Ontario the second largest producer of copper in Canada after British Columbia.

Ontario copper is recovered mainly as a co-product from copper-nickel and copper-zinc ores. Copper production from the Sudbury Basin accounts for 48% of the Province's production and 45% is produced from Falconbridge's Kidd Creek deposit. The remaining output is from Northwestern Ontario and from gold mines in Northeastern Ontario.

Copper production in Ontario has remained relatively constant over the past 20 years averaging 249 640 tonnes in the 1967-1987 period. Production peaked in 1984 at 292 000 tonnes and reached a low of some 158 000 tonnes during the 1982 recession.

Accounting for 9% of world copper production, Canada ranks third in the world after Chile and the United States. $1.5 billion of copper was exported from Canada, mainly to the United States and Japan and $482 million was imported in 1987. In 1986, Canada consumed 204 685 tonnes of copper representing 29% of its production.

Copper prices increased from Cdn$2.04 per kilogram in 1986 to Cdn$3.21 in 1988. The price increase is attributed to a tight market supply and the decline in the value of the U.S. dollar.

World consumption of copper is expected to grow at an annual rate of 1 to 1.5%. In order for Canada to maintain its share of the world copper market, the mining industry will have to discover from 1988 to 2000 about 1.3Mt/y of mineable copper according to Energy, Mines and Resources.

It is estimated that about 50% of total copper consumption is used in electrical wiring and equipment. Other uses include heating radiators and structural uses in shipbuilding and chemical plants.

In the table, production includes:
(a) recoverable copper (metal paid for) in ores and concentrate shipped for export
(b) copper content of blister copper made at Canadian smelters
(c) copper content of nickel-copper matte shipped for export by Canadian smelters. No allowance is made for losses in treatment of matte, as practically all of the copper is recovered.

Value is based on settlement value as reported or when settlement value is not available it is based on the average yearly industry price times volume.

GOLD

In 1987, gold production in Ontario totaled over 53 tonnes representing an increase of 15% from 1986. The increase in Ontario's output is attributed to several new mining operations starting production in 1987 and higher than expected ore grades and increased recoveries in the Hemlo area. This represents 45% of Canada's total gold production making Ontario the largest producer in Canada. Ontario's output represents approximately 3% of world gold production. Canada ranks fourth in the world after South Africa, the U.S.S.R. and the United States.

Gold production peaked in Ontario in 1940 at over 101 tonnes. From 1960 to 1981, output decreased from 85 tonnes to 18 tonnes. However, production has increased at an average annual rate of 20% from 1981 to 1987 mainly due to the opening of three mines in the Hemlo area in 1986.

In 1987 and 1988, there were over 20 gold mines operating in the Timmins, Kirkland Lake, Red Lake and Hemlo mining camps. Over 5,100 are employed at these gold mines representing 26% of the total mine employment in the Province. Several new and reactivated mining operations came on stream during 1988, namely, the Aquarius Mine (Lake Asbestos of Canada Ltd.), the Holt-McDermott Mine (American Barrick Resources), Eastmaque Gold Mines Ltd. tailings operation, the Kremzar and Matheson Mines (Canamax Resources Inc.), ERG Resources Inc. tailings operation, the Golden Patricia Mine (Bond Gold Canada Inc.), the McBean Mine (Inco-Queenston Joint Venture), the Barber-Larder Mine (Rockford Minerals Inc.) and the Magino Mine (Muscocho Explorations Ltd.-McNellen Resources Inc.).

On-property and off-property exploration expenditures for gold totaled $222 million in 1987 for the Province. This represents over 75% of the total provincial exploration dollars. During 1987, some $135 million was spent on mine development which represents 40% of total development expenditures in Ontario.

The average price of gold increased to US$447 per troy ounce in 1987 from the average price of US$368 in 1986. The firmness in the 1987 price indicates strong investment demand. The main uses for gold remain carat jewellery and official coins.

In the table, production includes:
(a) gold in crude bullion obtained direct from lode gold and other mines
(b) gold in blister copper made at copper smelters
(c) gold in base bullion made by lead smelters
(d) gold in all types of ores, concentrates, matte, etc. shipped for export
(e) gold in platinum-palladium concentrates shipped for export.

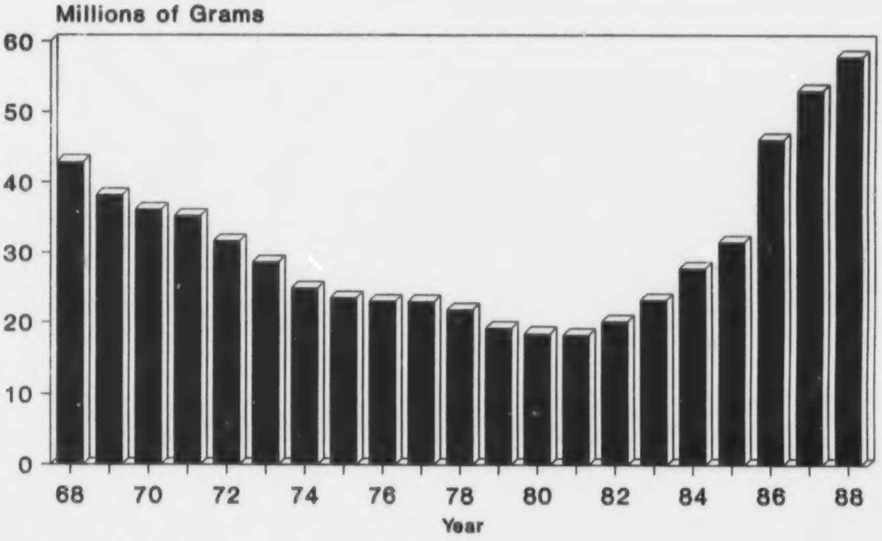
Value is based on settlement value as reported or when settlement value is not available it is based on the average yearly industry price times the volume.

VOLUME AND VALUE OF PRODUCTION OF GOLD IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
	TROY OUNCES	G	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/G
1968	1 380	42 916	52 031	58 660	209 886	4.89
1969	1 230	38 247	46 346	49 996	178 885	4.68
1970	1 162	36 144	42 484	43 889	157 034	4.34
1971	1 134	35 271	40 080	40 080	143 405	4.07
1972	1 019	31 704	58 720	55 977	200 286	6.32
1973	922	28 687	89 843	79 018	282 726	9.86
1974	801	24 917	124 428	96 157	344 051	13.81
1975	755	23 488	123 679	84 422	302 064	12.86
1976	740	23 002	91 043	56 760	203 088	8.83
1977	739	22 989	116 108	67 623	241 954	10.52
1978	701	21 805	154 513	84 572	302 599	13.88
1979	616	19 173	221 474	110 351	394 834	20.59
1980	595	18 497	403 893	181 362	648 913	35.08
1981	589	18 308	333 797	135 525	484 907	26.49
1982	647	20 137	306 786	111 884	400 322	19.88
1983	748	23 260	389 338	134 023	479 536	20.62
1984	894	27 821	413 230	137 195	490 882	17.64
1985	1 016	31 600	441 493	140 827	503 879	15.95
1986	1 483	46 141	755 187	229 401	820 796	17.79
1987 (R)	1 707	53 081	1 016 104	296 759	1 061 805	20.00
1988 (P)	1 861	57 882	1 002 920	280 302	1 002 920	17.33
TOTAL	20 739	645 070		2 474 783	8 854 772	

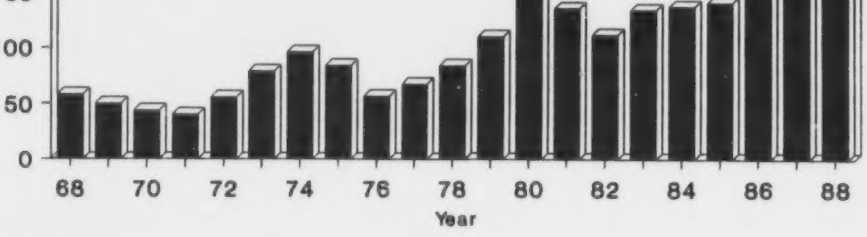
SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF GOLD
IN ONTARIO



'88 - Preliminary

VALUE OF PRODUCTION OF GOLD IN ONTARIO
(IN 1971 CONSTANT $)



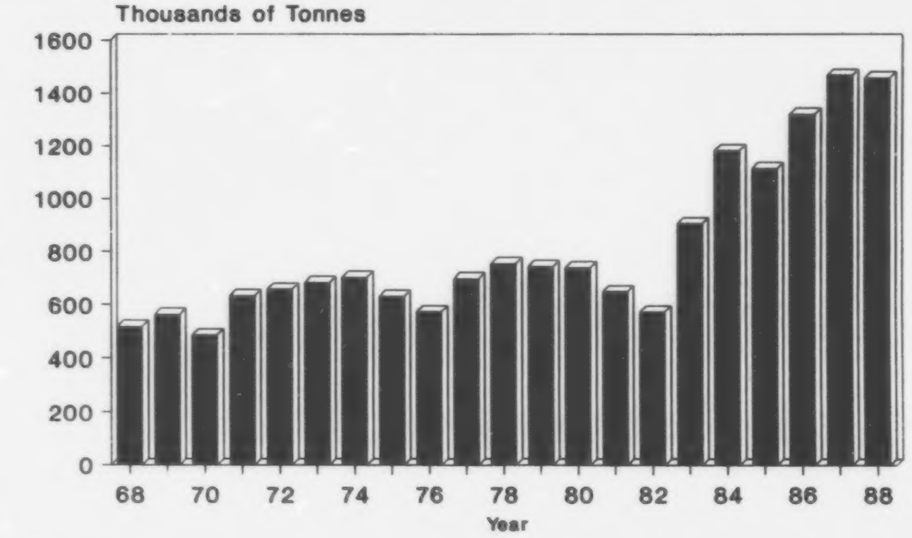
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF GYPSUM IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S SHORT TONS	TONNE	VALUE OF PRODUCTION IN 000'S CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	UNIT VALUE 1988 DOLLARS/TONNE
1968	571	518	1 461	1 647	5 894	11.38
1969	622	564	1 598	1 724	6 168	10.93
1970	537	487	1 195	1 235	4 419	9.07
1971	699	634	1 656	1 656	5 927	9.35
1972	726	659	2 158	2 057	7 361	11.17
1973	754	684	2 394	2 105	7 532	11.01
1974	774	703	2 784	2 151	7 697	10.96
1975	695	631	2 936	2 004	7 171	11.37
1976	633	574	2 680	1 671	5 979	10.42
1977	771	699	3 991	2 324	8 317	11.89
1978	833	756	4 525	2 477	8 861	11.73
1979	820	744	4 831	2 407	8 613	11.58
1980	816	740	5 729	2 572	9 204	12.44
1981	716	650	5 477	2 224	7 956	12.25
1982	633	574	5 516	2 012	7 198	12.53
1983	1 000	907	9 938	3 421	12 240	13.49
1984	1 304	1 183	12 716	4 222	15 105	12.77
1985	2 457	1 114	15 056	4 802	17 183	15.42
1986	1 457	1 321	16 974	5 156	18 449	13.96
1987 (R)	1 618	1 468	16 547	4 833	17 291	11.78
1988 (P)	1 608	1 459	19 712	5 509	19 712	13.51
TOTAL	20 044	17 069		58 209	208 277	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF GYPSUM
IN ONTARIO



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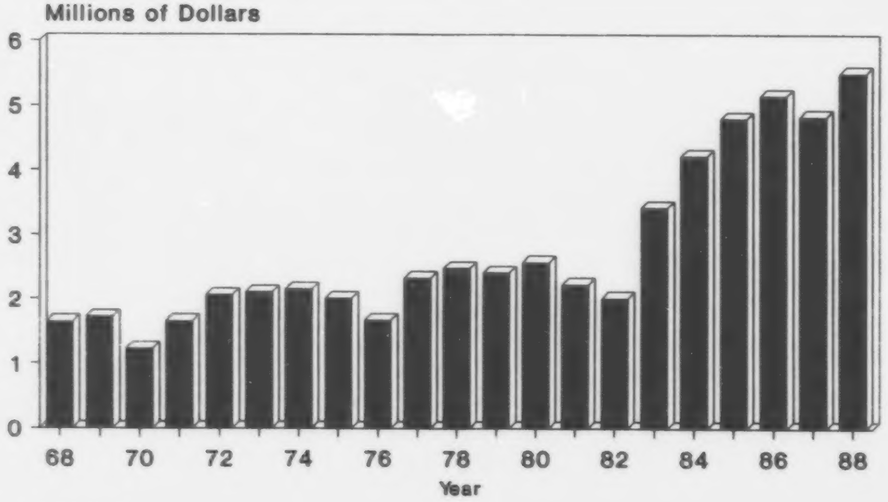
VALUE OF PRODUCTION OF GYPSUM IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

GYPSUM

In 1987, the gypsum industry in Ontario continued to improve in response to the upward trend experienced by the building construction industry. Production output increased to 1.4 million tonnes valued at $16.5 million. Housing starts in the Province increased by 24% from 1986 to 1987. In response to this increase, the demand for gypsum wallboard continued to show strong growth.

Production volume for the year increased by 11% over 1986, representing 16% of Canada's gypsum output. Canada ranks second in world production of crude gypsum. Ontario's three gypsum producers, Canada Gypsum Co.(CGC), Domtar Inc. and Westroc Industries Limited, operate underground mines. With the exception of Westroc Industries Limited, the gypsum mined is used on-site in the manufacturing of wallboard. Westroc's output is shipped from the mine site in Drumbo to their wallboard plant in Mississauga. Gypsum is usually mined from deposits situated in close proximity to high volume market areas due to its low-cost, high bulk characteristics.

The use of gypsum in the building construction industry is expected to remain secure due to its low unit price, noted insulating and fire-retardant properties and ease of installation.

Although residential housing starts in 1988 decreased by 9% over 1987, in Ontario the growth of the commercial building construction sector is expected to maintain its present pace, thereby guaranteeing the increasing market for gypsum-based building materials. In this regard, projections for 1988 are expected to be similar to 1987.

In the accompanying table, production is taken as the tonnage of crude gypsum shipped from quarries or mines in lump, crushed or fine ground form. The value is that reported by the producers.

IRON ORE

The demand for iron ore is governed by trends in the production of iron and steel. In terms of output, less than 2% of the iron ore produced in the world goes into its other end uses, which include pigments, specialty aggregates, cement and coal washing. Iron is the fourth most common element in the Earth's crust.

Canada ranks sixth in world production of iron ore. Production in Ontario reached its peak in 1973, at a level of 11.3 million tonnes. Since that time, iron ore production within the Province has fluctuated, but continued on a long term decreasing trend. Iron ore is produced in four provinces; Newfoundland, Quebec, Ontario and British Columbia in decreasing order of production output.

In 1987, Ontario's producing mines, operated by Dofasco Inc. and Algoma Steel Corp. Ltd., produced 3.2 million tonnes of iron ore valued at $151 million. This represented a 6.5 % decrease in volume and 14.5 % decrease in value over 1986 production levels. Total Canadian production volume in 1987 increased by 4.2 % to 38 million tonnes from 1986, with value increasing 3.9 % to $1.4 billion.

Iron ore is traded as lump ore, fines, concentrates and pellets. Pellets were first produced commercially in Ontario in 1955 at Marmora by Bethlehem Steel Corporation. The use of pellets in the production of steel resulted in increased furnace productivity and reduced fuel consumption.

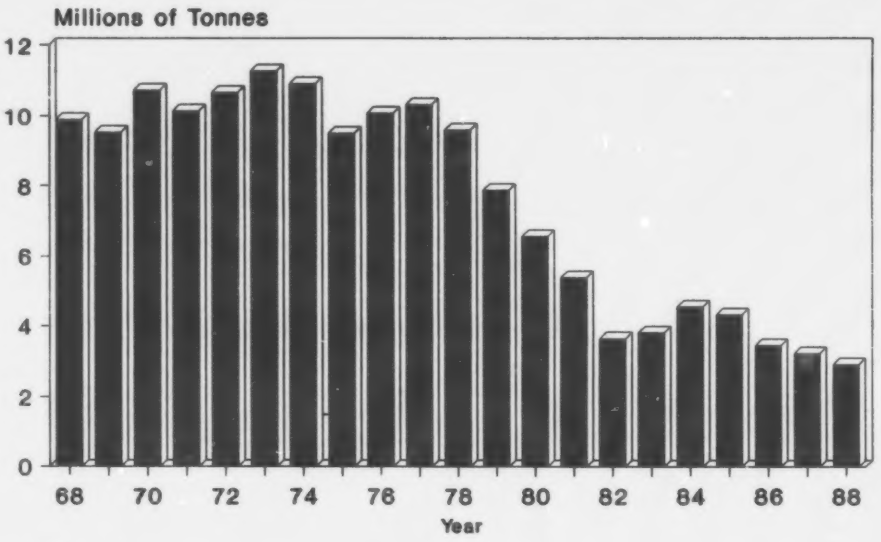
A restructuring of the steel industry in recent years has significantly affected the strategies and perspectives of Canadian iron ore producers. While increased productivity in many Canadian iron mines has resulted in lower production costs, the iron ore mining industry in Ontario has not been as fortunate. Ontario's industry is characterized by higher capital, operational and freight costs. Ore deposits within the Province are small and of lower grade than other existing iron mines within Canada. With Dofasco's announcement of its intention to close the Adams and Sherman mines in March 1990, the significance of this portion of Ontario's mining industry will continue to decline.

In the accompanying table, iron ore production figures represent product shipments from specific locations at the values indicated by the producers.

VOLUME AND VALUE OF PRODUCTION OF IRON ORE IN ONTARIO

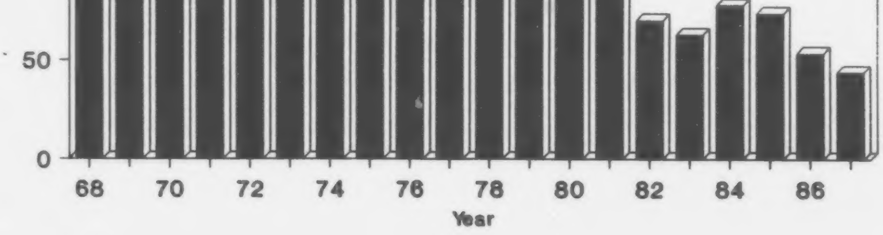
YEAR	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
	SHORT TONS	TONNE	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/TONNE
1968	10 907	9 895	127 138	143 335	512 851	51.83
1969	10 517	9 541	128 166	138 259	494 692	51.85
1970	11 828	10 730	144 765	149 551	535 094	49.87
1971	11 179	10 141	136 205	136 205	487 343	48.06
1972	11 755	10 664	139 515	132 998	475 866	44.62
1973	12 424	11 271	152 469	134 097	479 800	42.57
1974	12 022	10 906	180 090	139 173	497 961	45.66
1975	10 476	9 504	219 024	149 504	534 927	56.29
1976	11 112	10 081	252 318	157 305	562 839	55.83
1977	11 375	10 320	287 811	167 624	599 759	58.12
1978	10 582	9 600	308 367	168 783	603 906	62.91
1979	8 681	7 875	287 191	143 095	511 993	65.02
1980	7 241	6 569	261 999	117 646	420 939	64.08
1981	5 947	5 395	245 463	99 660	356 583	66.10
1982	4 024	3 650	193 446	70 549	252 425	69.15
1983	4 206	3 816	183 793	63 268	226 372	59.33
1984	5 016	4 551	236 349	78 469	280 762	61.70
1985	4 770	4 328	232 496	74 161	265 350	61.32
1986	3 813	3 459	176 488	53 611	191 821	55.45
1987 (R)	3 567	3 236	150 728	44 021	157 507	48.68
1988 (P)	3 226	2 927	X	X	X	N/A
TOTAL	174 668	158 459		2 361 314	8 448 790	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION



VOLUME OF PRODUCTION OF IRON ORE
IN ONTARIO

'88 - Preliminary



VALUE OF PRODUCTION OF IRON ORE IN ONTARIO
(IN 1971 CONSTANT $)

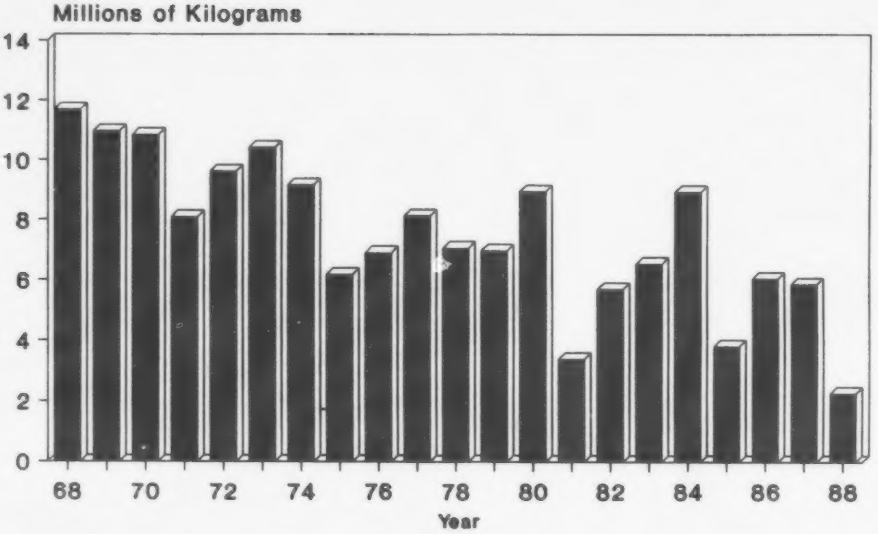
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF LEAD IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	25 801	11 703	3 468	3 909	13 988	1.20
1969	24 193	10 974	3 670	3 959	14 166	1.29
1970	23 920	10 850	3 784	3 909	13 987	1.29
1971	17 831	8 088	2 407	2 407	8 613	1.06
1972	21 211	9 621	3 272	3 120	11 162	1.16
1973	22 992	10 429	3 711	3 264	11 678	1.12
1974	20 222	9 172	4 187	3 236	11 578	1.26
1975	13 651	6 192	2 766	1 888	6 756	1.09
1976	15 225	6 906	3 449	2 150	7 693	1.11
1977	17 942	8 138	5 649	3 290	11 771	1.45
1978	15 565	7 060	5 732	3 137	11 225	1.59
1979	15 363	6 969	9 206	4 587	16 412	2.36
1980	19 753	8 960	9 088	4 081	14 601	1.63
1981	7 459	3 384	4 009	1 628	5 824	1.72
1982	12 559	5 697	3 816	1 392	4 979	.87
1983	14 427	6 544	2 865	986	3 529	.54
1984	19 690	8 931	6 311	2 095	7 496	.84
1985	8 420	3 819	1 907	608	2 177	.57
1986	13 371	6 065	4 130	1 254	4 488	.74
1987 (R)	12 926	5 863	6 459	1 886	6 750	1.15
1988 (P)	4 999	2 268	2 268	634	2 268	1.00
TOTAL	347 520	157 633		53 420	191 141	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF LEAD
IN ONTARIO



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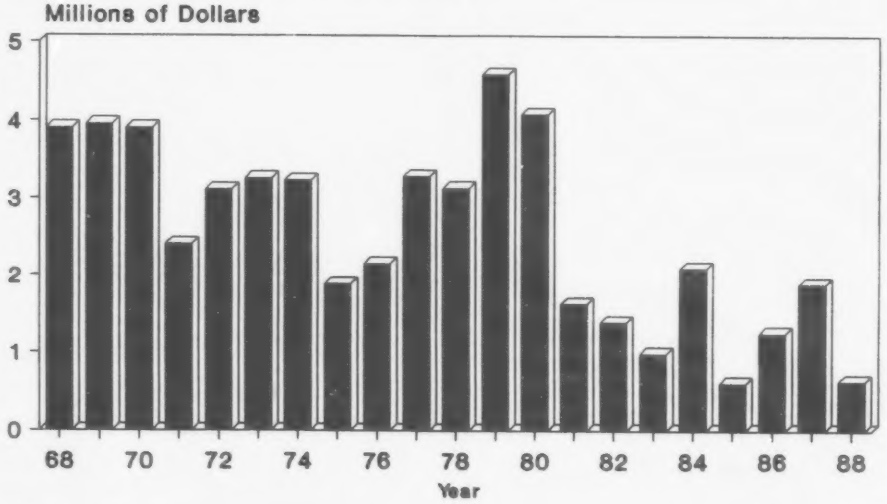
VALUE OF PRODUCTION OF LEAD IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

LEAD

Since the beginning of the century, world consumption of lead has increased from 800 000 tonnes in 1900 to 4.2 million tonnes in 1987, an average yearly increase of 2 %. Exceptions to this growth have been in times of economic recession and most notably, following the two world wars. Throughout the past five years, consumption and demand for lead has steadily increased.

Ontario's mine production of lead in 1987 was 5.8 million kg, a 3 % decrease in volume from 1986. This production represents only 1.5 % of Canada's lead output. Canadian lead production is as a by-product of zinc recovery.

As a result of a four month strike in 1987 at Cominco's operations in British Columbia, and greater demand from battery producers, lead prices increased 68 % from 1986. This occurred at a time when lead stocks were at their lowest level since 1979. In spite of this, Canada's production volume and value increased by 11 % and 73 % respectively from 1986 to 1987.

Lead is used primarily in the production of batteries, for sound insulation, roofing materials, protective coatings, pigments and in the petroleum industry as an additive. Approximately 55 % of lead produced is used as metal and 45 % in the form of compounds.

The trends established in 1980's are expected to continue over the next few years. Lead consumption for batteries will increase while its use for petroleum additives continues to decline.

In the accompanying table, production includes recoverable lead (metal paid for) in ores and concentrates shipped either for export or to Brunswick Mining and Smelting Corporation, Belledune, New Brunswick, or Cominco, Trail, British Columbia.

Value is based on settlement value reported or when settlement value is not available it is based on the average yearly industry price x volume.

LIME

In 1987, Ontario's lime industry produced some 1.6 million tonnes of lime valued at $108.5 million. Ontario is the largest producer in Canada accounting for 67% of Canada's total production. While output peaked to over 1.8 million tonnes in 1981, annual production has remained relatively stable in the 1980–1987 period, averaging 1.6 million tonnes per year. In Ontario, there are eight producers located throughout the Province employing approximately 385 people.

Lime is calcium oxide (CaO) and calcium magnesium oxide (CaO•MgO) and is a product of the calcination of limestone and dolomite. In Ontario, lime production consists of quick lime (64%), hydrated lime (3%) and captive use, mainly by steel producers (33%). The main sources of lime in Ontario are the Detroit River Group and Lockport Formation in southwestern Ontario.

In 1987, Canada consumed over 2.1 million tonnes of lime representing 95% of the nation's production in that year. The principal uses for lime are in iron and steel plants, pulp and paper mills, glass manufacturing, uranium industry, fertilizers and water and sewage treatment. Lime is also used in the removal of sulphur from stack gases. With increasing legislation to control acid rain, the demand for lime may increase in the longer term.

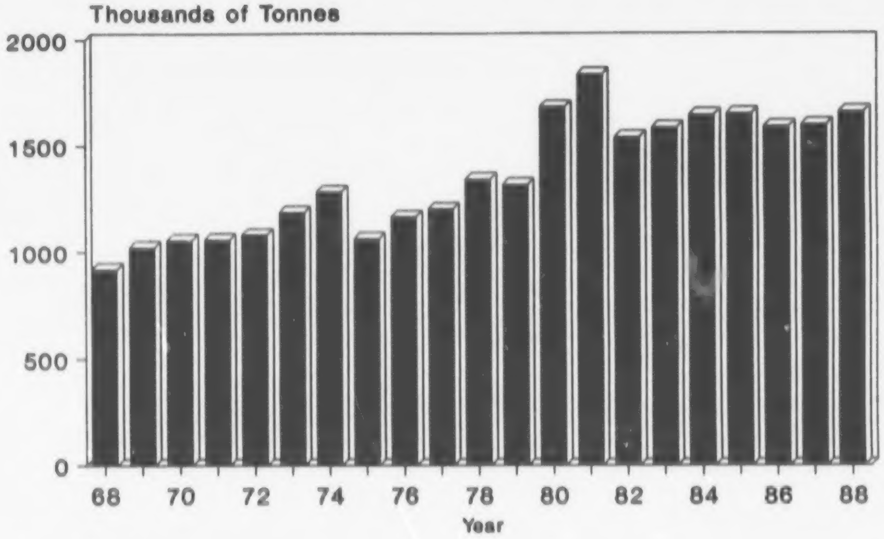
In the table, production represents the tonnage of hydrated and quicklime shipped and the tonnage of lime produced and consumed by the producers of chemicals and allied products. The values used are as reported by the producer.

VOLUME AND VALUE OF PRODUCTION OF LIME IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
	SHORT TONS	TONNE	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/TONNE
1968	1 014	920	11 772	13 272	47 486	51.64
1969	1 129	1 024	12 434	13 413	47 991	46.84
1970	1 164	1 056	13 810	14 267	51 046	48.35
1971	1 167	1 059	16 886	16 886	60 417	57.06
1972	1 192	1 082	18 475	17 612	63 016	58.27
1973	1 307	1 186	20 626	18 141	64 908	54.73
1974	1 414	1 283	26 304	20 328	72 733	56.70
1975	1 173	1 064	27 063	18 473	66 097	62.10
1976	1 286	1 166	35 255	21 979	78 643	67.43
1977	1 327	1 204	39 971	23 280	83 295	69.19
1978	1 479	1 342	48 493	26 543	94 969	70.78
1979	1 453	1 318	51 921	25 870	92 562	70.23
1980	1 856	1 683	74 389	33 403	119 517	71.00
1981	2 024	1 836	94 700	38 449	137 570	74.92
1982	1 697	1 540	82 813	30 202	108 061	70.19
1983	1 749	1 586	89 252	30 724	109 929	69.30
1984	1 815	1 647	98 101	32 570	116 535	70.77
1985	1 822	1 652	109 976	35 080	125 516	75.96
1986	1 754	1 591	96 341	29 265	104 711	65.82
1987 (R)	1 765	1 601	108 486	31 684	113 365	70.80
1988 (P)	1 830	1 660	114 374	31 966	114 374	68.90
TOTAL	31 417	28 500		523 407	1 872 741	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF LIME
IN ONTARIO



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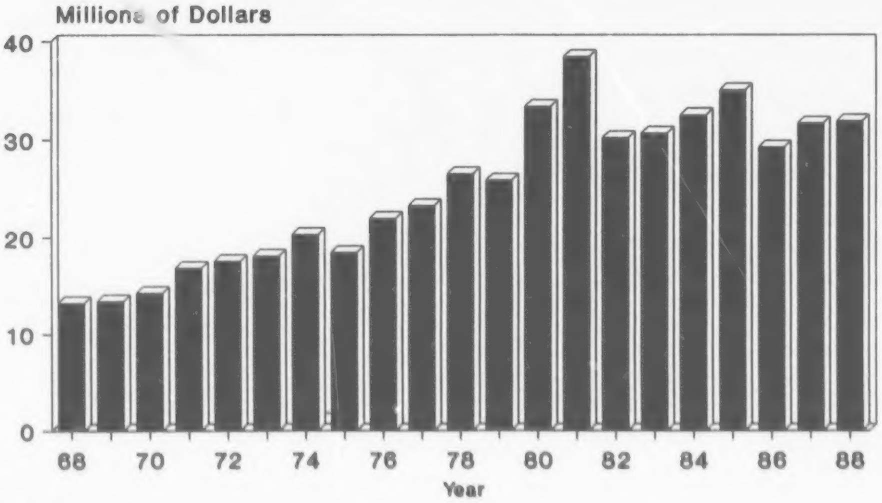
VALUE OF PRODUCTION OF LIME IN ONTARIO
(IN 1971 CONSTANT $)



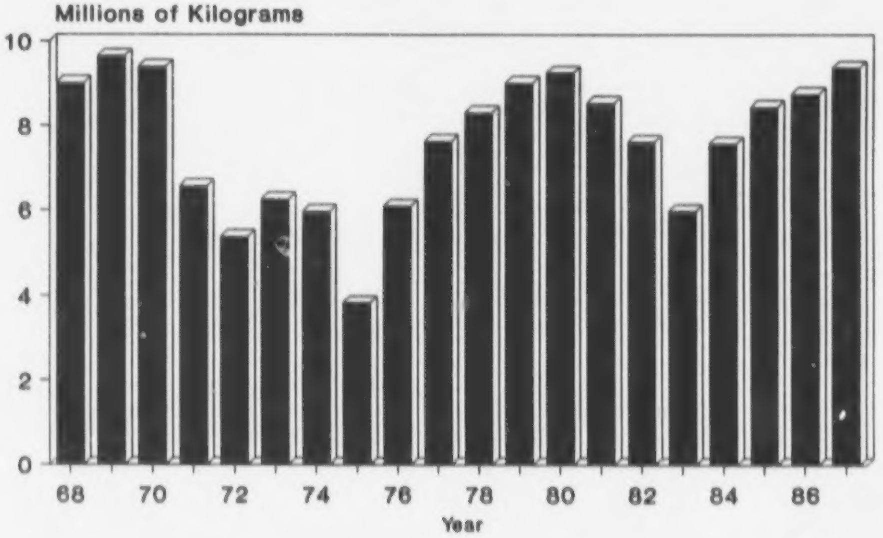
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF MAGNESIUM IN ONTARIO

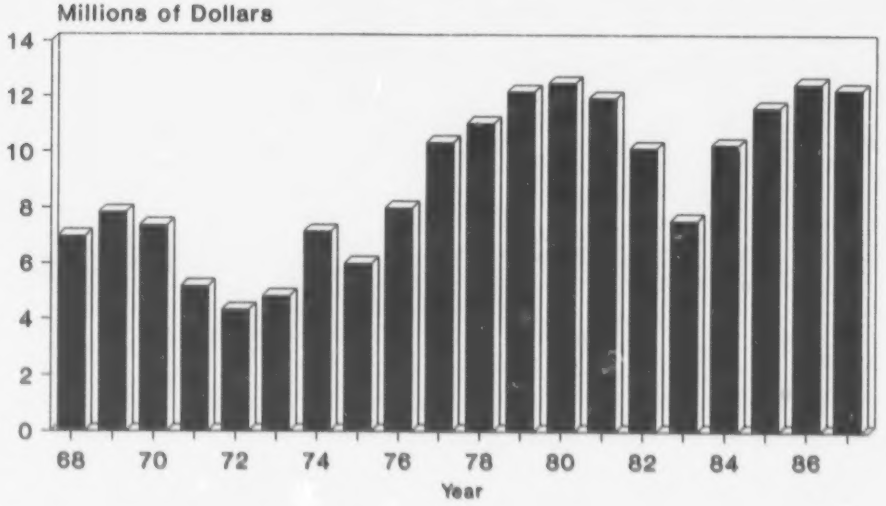
YEAR	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	19 857	9 007	6 182	6 970	24 937	2.77
1969	21 275	9 650	7 264	7 836	28 037	2.91
1970	20 707	9 393	7 141	7 377	26 394	2.81
1971	14 467	6 562	5 164	5 164	18 477	2.82
1972	11 848	5 374	4 537	4 325	15 476	2.88
1973	13 770	6 246	5 483	4 822	17 253	2.76
1974	13 133	5 957	9 260	7 156	25 605	4.30
1975	8 434	3 826	8 788	5 999	21 464	5.61
1976	13 430	6 092	12 825	7 996	28 609	4.70
1977	16 827	7 633	17 767	10 347	37 023	4.85
1978	18 323	8 311	20 155	11 032	39 472	4.75
1979	19 875	9 015	24 444	12 179	43 578	4.83
1980	20 397	9 252	27 822	12 493	44 700	4.83
1981	18 845	8 548	29 439	11 953	42 767	5.00
1982	16 822	7 630	27 812	10 143	36 291	4.76
1983	13 184	5 980	21 978	7 566	27 070	4.53
1984	16 728	7 588	30 927	10 268	36 738	4.84
1985	18 621	8 446	36 370	11 601	41 509	4.91
1986	19 286	8 748	41 001	12 455	44 563	5.09
1987 (R)	20 663	9 373	41 924	12 244	43 809	4.67
1988 (P)	X	X	X	X	X	X
TOTAL	336 492	152 631		179 926	643 772	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF MAGNESIUM
IN ONTARIO



VALUE OF PRODUCTION OF MAGNESIUM IN ONTARIO
(IN 1971 CONSTANT $)



Source: Information & Statistics Section
MNDM

MAGNESIUM

In Canada, the main use for magnesium is in the production of aluminum alloys used in the manufacture of beverage cans, window frames and aircraft parts. In North America, the aluminum industry accounts for over 50% of magnesium consumption. In the past few years, the use of magnesium in diecasting of automotive parts has increased. This light metal is also used in the nuclear, chemical and pharmaceutical industries.

Timminco Metals is the only producer of magnesium metal in Canada. Timminco's plant at Haley, Ontario began operations in 1941 just as magnesium production was becoming important internationally. While Timminco's output is relatively small in relationship to total world production, its plant is the world's number one producer of high purity grades.

In 1987, Ontario produced 9 373 tonnes of magnesium valued at $42 million. This represents an increase of 7.2% over 1986's volume of 8 700 tonnes. The price of the metal has remained stable over the 1986 to 1988 period averaging $4.45 per kilogram. In 1986, Canada consumed 6 731 tonnes of magnesium while importing 3 419 tonnes and exporting 4 729 tonnes.

The consumption of magnesium is excepted to grow at an annual rate of 2.5% until the end of the next decade. With several new magnesium projects anticipated to come on stream in the near future, Canada has the potential of becoming a principal world producer of the metal.

In the table, output figures represent magnesium metal plus magnesium content of alloys, valued at the average yearly industry price times volume.

NATURAL GAS

In 1987, natural gas production was over 511 million cubic metres in Ontario. This represents a decrease of 4% from the preceding year's output. Production in the Province represents less than one per cent of Canada's total natural gas output.

Currently, Lake Erie is the main source of natural gas where there are 600 active wells producing 390 million cubic metres. Over 650 wells are active on land. Natural gas is principally located in rocks of Silurian age and to a lesser extent in the Cambrian and Ordovician.

Total consumption of natural gas in Ontario totaled over 19.5 billion cubic metres in 1987. Types of consumption are represented by: residential use (30%), commercial use (22%) and industrial use (48%).

In Canada, natural gas exports increased by 33% from 1986 to 28 billion cubic metres. More competitive Canadian prices and better access to U.S. markets are attributed to this increase. Increased exports helped Canadian producers by offsetting the effects of overall poorer prices.

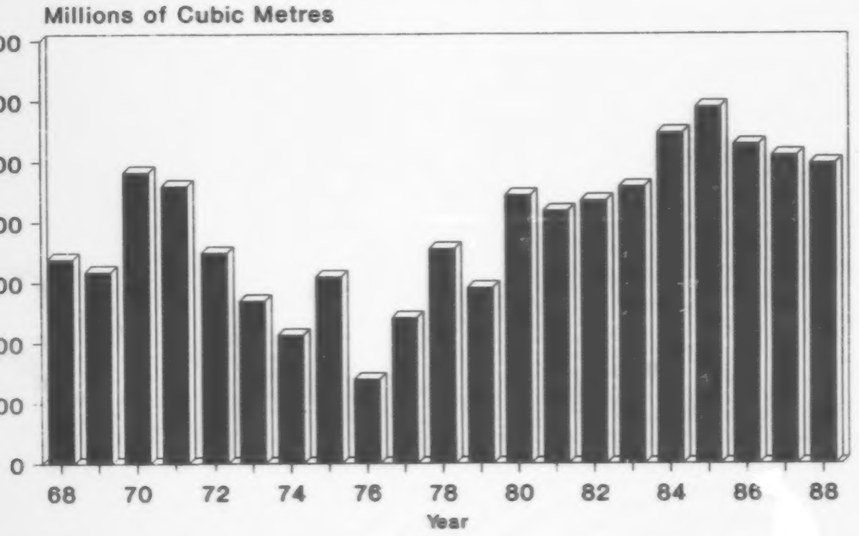
In the table, production is taken as all production less that portion returned to formation, valued at wellhead prices. Production derived from crude bitumen (synthetic crude) is valued at the processing plant gate.

VOLUME AND VALUE OF PRODUCTION OF NATURAL GAS IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
	M CU FEET	K CU M	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/K CU M
1968	12	339	4 599	5 185	18 551	54.71
1969	11	318	4 275	4 612	16 501	51.85
1970	17	483	6 488	6 702	23 981	49.63
1971	16	460	6 333	6 333	22 660	49.22
1972	12	350	4 768	4 545	16 262	46.41
1973	10	270	3 678	3 235	11 574	42.90
1974	8	213	3 248	2 510	8 981	42.08
1975	11	310	6 508	4 442	15 895	51.33
1976	5	140	4 860	3 030	10 841	77.20
1977	9	242	10 267	5 980	21 395	88.58
1978	13	356	21 377	11 701	41 864	117.57
1979	10	292	21 420	10 673	38 187	130.78
1980	16	445	33 481	15 034	53 793	120.82
1981	15	419	34 556	14 030	50 200	119.73
1982	15	436	41 360	15 084	53 971	123.69
1983	16	459	45 931	15 811	56 572	123.17
1984	19	548	68 466	22 731	81 332	148.37
1985	21	590	73 143	23 331	83 479	141.52
1986	19	529	68 269	20 738	74 200	140.39
1987 (R)	18	511	67 209	19 629	70 232	137.35
1988 (P)	18	497	63 633	17 785	63 633	128.03
TOTAL	291	8 207		233 121	834 104	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF NATURAL GAS
IN ONTARIO



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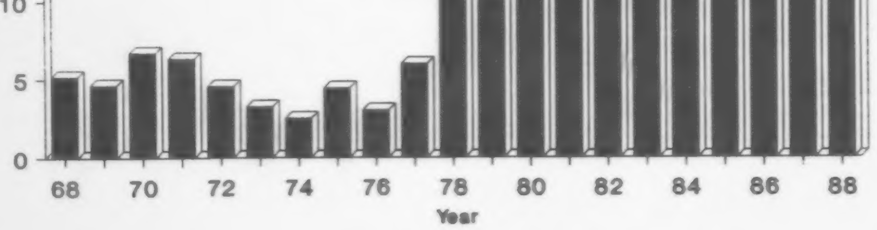
VALUE OF PRODUCTION OF NATURAL GAS IN ONTARIO
(IN 1971 CONSTANT $)



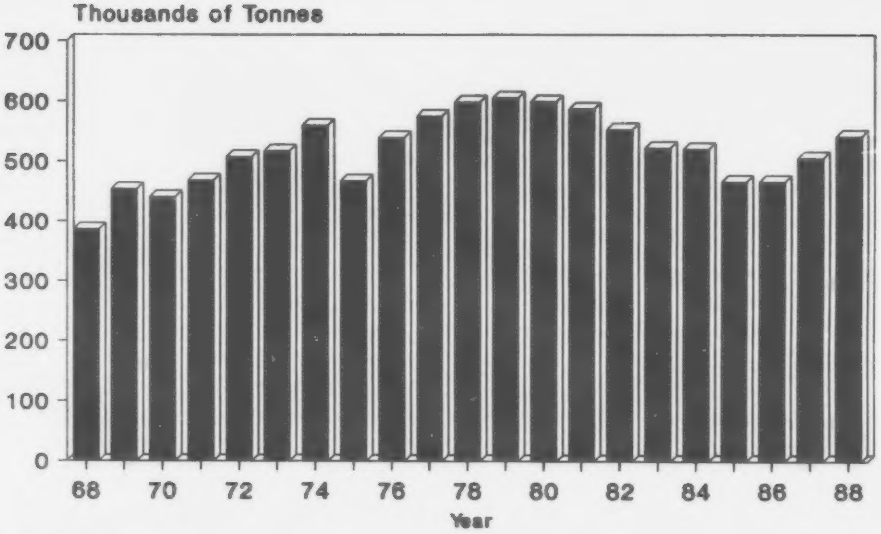
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF NEPHELINE SYENITE IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
	SHORT TONS	TONNE	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/TONNE
1968	427	387	4 738	5 342	19 112	49.39
1969	501	454	5 935	6 403	22 909	50.45
1970	487	441	5 801	5 993	21 443	48.57
1971	517	469	6 206	6 206	22 205	47.33
1972	559	508	5 902	5 626	20 131	39.66
1973	569	517	7 860	6 913	24 735	47.89
1974	617	560	9 179	7 094	25 382	45.33
1975	516	468	8 869	6 054	21 662	46.24
1976	595	540	10 566	6 588	23 570	43.64
1977	633	575	11 984	6 979	24 973	43.46
1978	660	599	14 182	7 762	27 774	46.36
1979	668	606	15 180	7 564	27 062	44.68
1980	661	600	16 544	7 429	26 581	44.32
1981	648	588	17 532	7 118	25 468	43.35
1982	609	553	17 882	6 522	23 334	42.21
1983	577	523	18 913	6 510	23 294	44.52
1984	574	521	18 609	6 178	22 106	42.46
1985	515	467	18 603	5 934	21 232	45.45
1986	515	467	19 848	6 029	21 572	46.14
1987 (R)	558	506	20 664	6 035	21 593	42.64
1988 (P)	598	542	23 411	6 543	23 411	43.19
TOTAL	12 004	10 891		136 822	489 549	

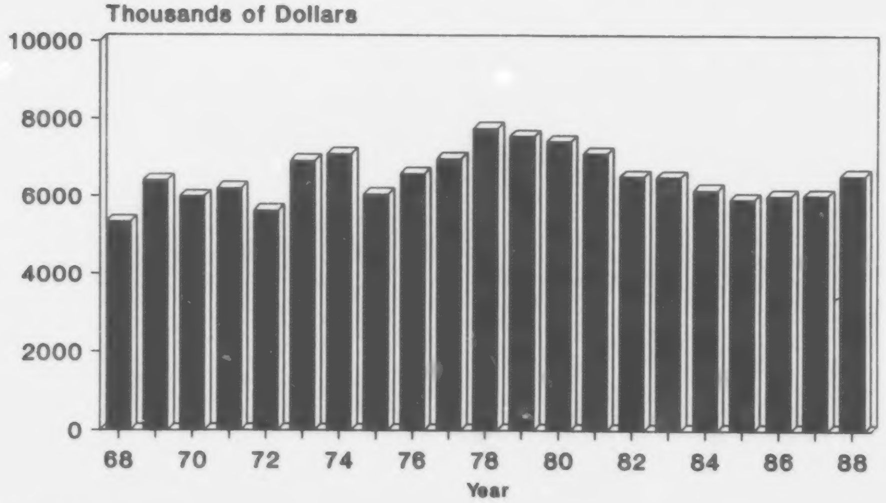
SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF NEPHELINE SYENITE
IN ONTARIO



'88 - Preliminary

VALUE OF PRODUCTION OF NEPHELINE SYENITE IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

NEPHELINE SYENITE

Ontario is the only producer of nepheline syenite in Canada and is the Western World's leading producer. Production totaled 506 414 tonnes in 1987, representing a 8% increase from 1986. Production is expected to increase by 7% in 1988.

Nepheline–syenite is produced at the Blue Mountain quarry owned by Falconbridge's Indusmin Division near Peterborough. The deposit was discovered in 1837 but production began only in 1936. Products from the plant are used mainly in the paint and plastics industries.

In 1986, 94 404 tonnes of nepheline syenite were consumed in Canada accounting for 20% of its total production. The primary glass and container industries account for 60% of the mineral's use in Canada followed by insulation (17%), ceramic products (17%) and paints and plastics (6%). Consumption of nepheline syenite continues to be affected by its decline in consumption by the container glass industry. Over 70% of nepheline syenite is exported, mainly to U.S. markets.

In the table, production of crude and ground nepheline syenite is the amount of the various grades shipped at the total selling price, f.o.b. plant.

NICKEL

The nickel industry in 1987 was characterized by a destocking of nickel by all producers. World production of primary nickel increased by 5.3 % in 1987 over 1986. Consumption rose by 5 % to 776 000 tonnes, in response to increased stainless steel production. This increase reduced the availability of scrap stainless steel, consequently increasing the demand for primary nickel.

The demand for nickel is influenced by consumer spending for durable goods and fluctuations in economic activity. In 1974, Ontario's production output peaked, exceeded 209 million kg. Production throughout the first part of the 1980's declined significantly due to oversupply. Between 1980 and 1983 production decreased from 145 million kg to 88 million kg. Following this recessionary period, output has increased in line with improved consumption and higher prices. From 1986 to 1987, Canadian production of nickel rose by 55 % to 189 million kg, with Ontario accounting for 69 %, or 130 million kg of this production.

In response to the demand for nickel in 1987, the scheduled five week shutdown at Inco's Sudbury operations was reduced to four weeks. As well, the Company's Crean Hill Mine, recognized as one of Canada's most highly automated and technically advanced mining operations, was reactivated. Due to an eight week shutdown at Falconbridge's Sudbury operations matte shipments to its refinery in Norway were reduced in 1987. However, the acquisition of Kidd Creek signified the move towards reducing the Company's dependence on nickel and diversification into the other base metals.

The outlook for the nickel industry in the short term looks good. Ontario's production in 1988 is expected to rise by 9 % over the previous year as the demand for stainless steel in Europe, the United States and Japan continues to grow.

Production figures in the accompanying table include:

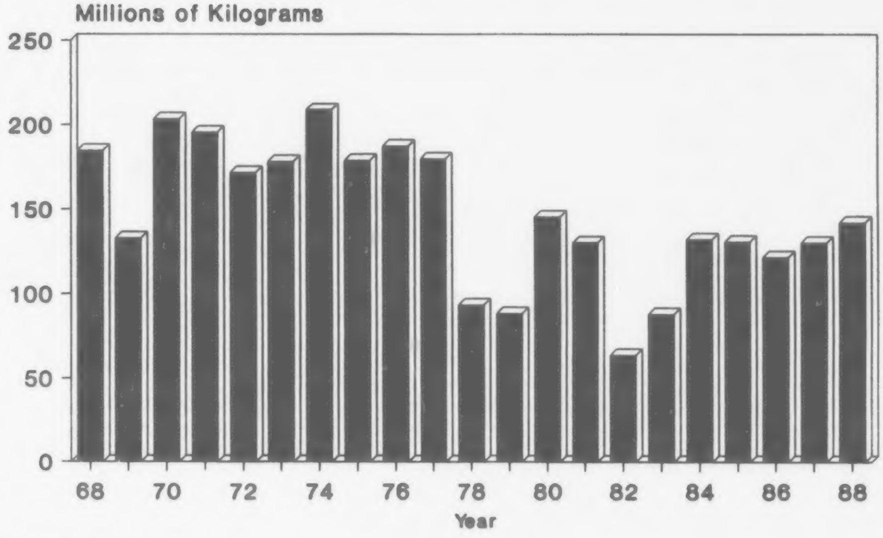
(a) Refined and eletrolytic nickel produced at Canadian refineries, valued at the average price obtained for such products sold during the year;
(b) Nickel in nickel oxides and in nickel salts sold from Canadian smelters and refineries during the year at the total selling price of these products;
(c) Nickel in matte for export from Canada, valued at average yearly industry price x volume.

VOLUME AND VALUE OF PRODUCTION OF NICKEL
IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S POUNDS	KG	VALUE OF PRODUCTION IN 000'S CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	UNIT VALUE 1988 DOLLARS/KG
1968	407 493	184 836	405 168	456 785	1 634 376	8.84
1969	293 561	133 157	329 076	354 991	1 270 156	9.54
1970	448 509	203 440	608 428	628 542	2 248 922	11.05
1971	431 507	195 728	583 946	583 946	2 089 360	10.67
1972	378 855	171 846	519 935	495 649	1 773 431	10.32
1973	393 293	178 395	574 786	505 529	1 808 782	10.14
1974	460 879	209 051	749 782	579 430	2 073 200	9.92
1975	394 837	179 095	811 329	553 808	1 981 525	11.06
1976	413 225	187 436	882 305	550 065	1 968 134	10.50
1977	396 821	179 995	927 518	540 197	1 932 825	10.74
1978	206 082	93 477	473 685	259 269	927 666	9.92
1979	194 987	88 445	566 279	282 152	1 009 540	11.41
1980	321 010	145 607	1 154 869	518 576	1 855 465	12.74
1981	287 193	130 269	1 001 218	406 503	1 454 469	11.17
1982	140 998	63 956	440 631	160 697	574 974	8.99
1983	194 650	88 292	550 125	189 372	677 572	7.67
1984	291 985	132 442	886 903	294 457	1 053 565	7.95
1985	288 882	131 035	930 760	296 893	1 062 284	8.11
1986	268 635	121 851	731 440	222 187	794 986	6.52
1987 (R)	286 978	130 171	869 315	253 889	908 414	6.98
1988 (P)	313 701	142 292	2 166 259	605 439	2 166 259	15.22
TOTAL	6 814 081	3 090 816		8 738 376	31 265 905	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF NICKEL
IN ONTARIO



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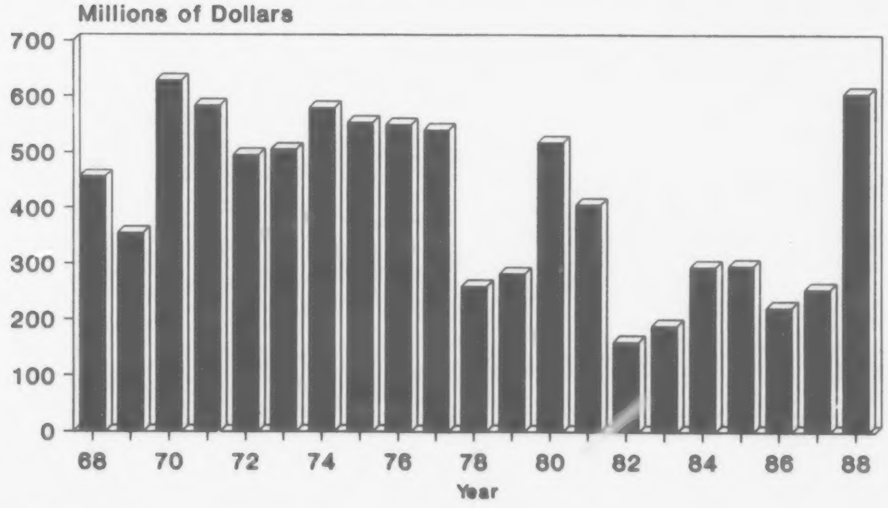
VALUE OF PRODUCTION OF NICKEL IN ONTARIO
(IN 1971 CONSTANT $)



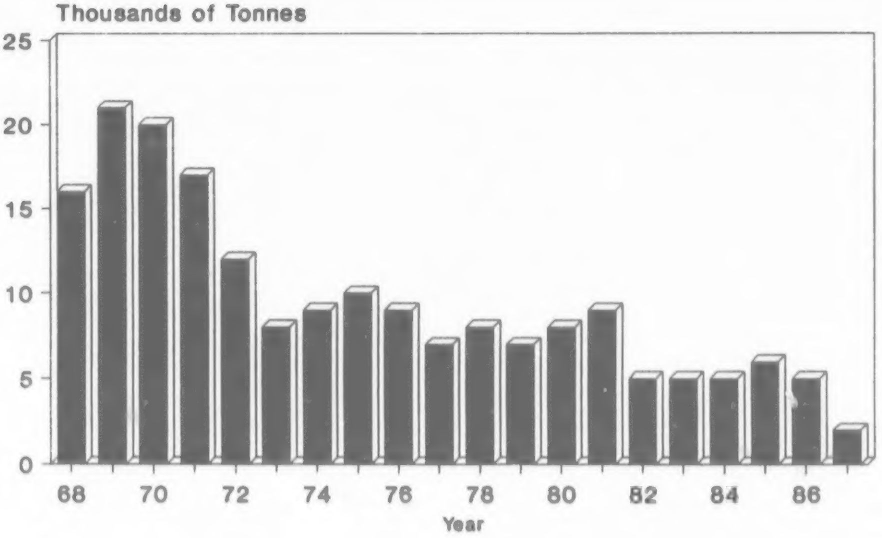
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF PEAT IN ONTARIO

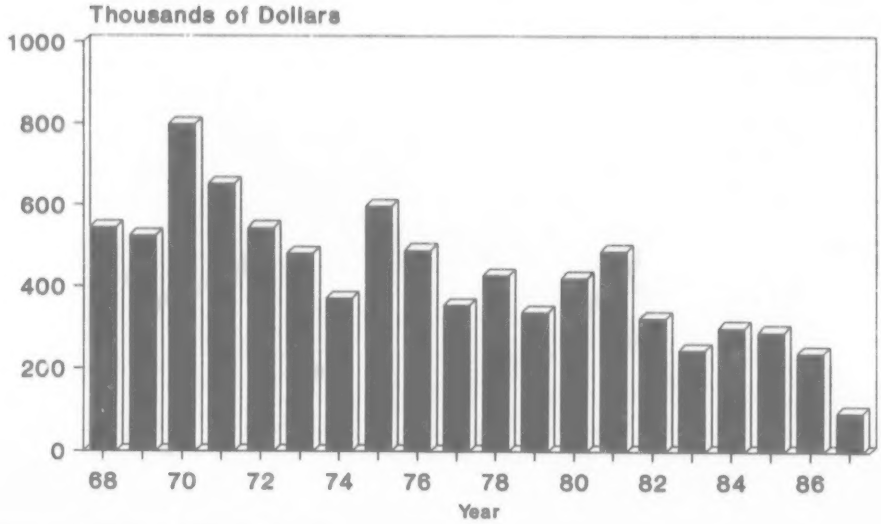
YEAR	VOLUME OF PRODUCTION IN 000'S SHORT TONS	TONNE	VALUE OF PRODUCTION IN 000'S CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	UNIT VALUE 1988 DOLLARS/TONNE
1968	18	16	484	545	1 951	120.27
1969	23	21	487	525	1 880	90.95
1970	22	20	774	799	2 859	141.80
1971	19	17	653	653	2 335	135.53
1972	14	12	571	544	1 947	158.25
1973	9	8	548	482	1 724	213.67
1974	10	9	482	372	1 332	147.79
1975	11	10	875	597	2 136	206.13
1976	10	9	785	490	1 751	200.88
1977	7	7	608	354	1 266	189.02
1978	9	8	782	428	1 531	183.95
1979	8	7	676	337	1 204	171.19
1980	9	8	939	422	1 508	195.37
1981	10	9	1 202	488	1 746	189.69
1982	5	5	886	323	1 156	247.37
1983	5	5	711	245	876	189.30
1984	6	5	904	300	1 074	206.31
1985	6	6	908	290	1 036	185.87
1986	6	5	785	238	853	164.67
1987 (R)	3	2	326	95	340	137.22
1988 (P)	X	X	X	X	X	X
TOTAL	210	189		8 527	30 505	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF PEAT
IN ONTARIO



VALUE OF PRODUCTION OF PEAT IN ONTARIO
(IN 1971 CONSTANT $)



Source: Information & Statistics Section
MNDM

PEAT

Ontario produces less that 1% of Canada's total peat output with Quebec and New Brunswick together producing 73% of the national output. Ontario's production totaled 2 480 tonnes in 1987, a decrease of 53% from 1986. About 30 persons are employed in the production of peat in Ontario. Approximately 75% of imports of peat moss into Canada are shipped to Ontario.

While Canada is the sixth largest producer of peat in the world, the U.S.S.R. produces over 95% of the world's output. Some 90% of Canada's peat production is exported. Canada remains an important source of peat for the United States which relies on Canada for 99% of its peat imports.

Canada produces mainly sphagnum peat which is used in horticulture and agriculture. Hypnum moss is produced in the Niagara region of Ontario. In a study conducted for the Ministry of Agriculture, it was estimated that 40% of Canada's horticultural peat consumption was in Ontario. In Ontario, the main markets consist of retail (consumer) markets (50%), mushroom growers (16%), greenhouse flower and vegetable growers (13%), nurseries (9%) and forestry nurseries (5%).

Ontario has the fourth largest peatland deposit in the world which is of high quality. Of the 111 million hectares of peatlands in Canada, some 20% are located in Ontario. Because of adequate supplies from other sources, geographic location of the deposit and transportion costs, Ontario's peat reserves have not yet been developed. Peat Resources Limited in partnership with INCO, Esso Resources Canada Limited and Lacana Mining Exploration is examining the potential of fuel peat production in Northern Ontario.

The North American market for peat is anticipated to grow at an annual rate of 3%. The future of the Canadian peat industry depends on its ability to provide new products and exports to markets overseas.

PETROLEUM, CRUDE

Oil production in Ontario totaled 135 635 cubic metres in 1987. There was no significant change in production over 1986. Although the Province's output represents less than 1% of Canada's total petroleum production, Ontario is the largest consumer of petroleum in the country. Ontario consumes more than one third of the total demand for gasoline in Canada. Currently Canada ranks tenth in world oil production well behind the U.S.S.R., the United States, Saudi Arabia and Mexico.

In 1858, James Miller Williams drilled North America's first oil well near London, Ontario which started the continent's first oil boom. By 1884, production from Ontario wells reached 143 000 cubic metres per year. From 1945 to 1966, production increased from 18 017 to 210 464 cubic metres. After 1966, oil production decreased to a low of 85,000 cubic metres in 1983. Since 1983, output has increased an average annual rate of 13%.

Prices for conventional crude oil at the wellhead ranged from $128 to $158 per cubic metre in 1987 and from $92 to $206 in 1986. Crude oil prices have recovered from the collapse in 1986 however overall world production remained unchanged.

In 1987, there were 1,175 active oil wells in southwestern Ontario. Oil is extracted from rocks of mainly Ordovician age and to a lesser extent from the Cambrian, Devonian and Silurian. Essex County is the largest producer of oil, mainly from the Hillman pool. Ontario has six petroleum refineries which employ over 2,300 people.

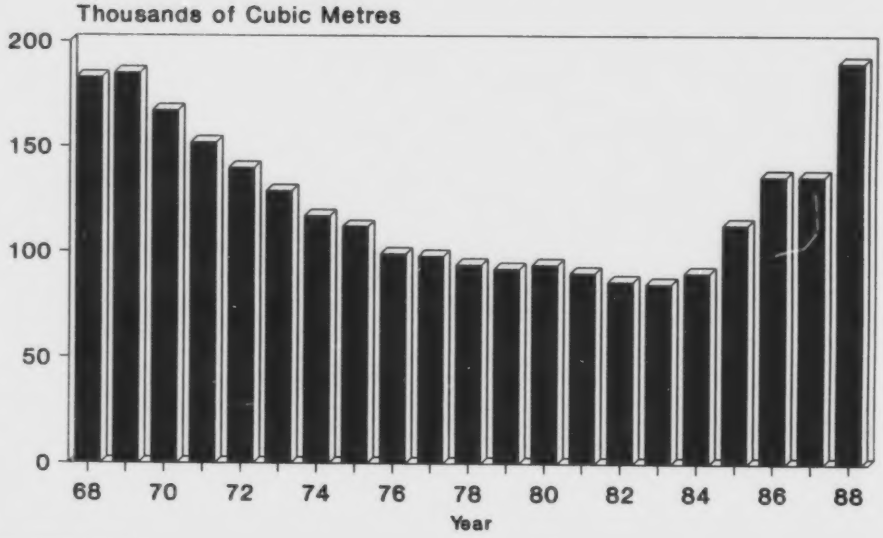
Exploration and development of Ordovician oil and gas reservoirs was the highlight of activity in Ontario in 1987. A total of 17 exploratory wells in the Ordovician were drilled, resulting in 10 oil producers and 1 gas producer.

In the table, production is taken as all production less that portion returned to formation, valued as wellhead prices. Production derived from crude bitumen (synthetic crude) is valued at the processing plant gate.

VOLUME AND VALUE OF PRODUCTION OF PETROLEUM IN ONTARIO

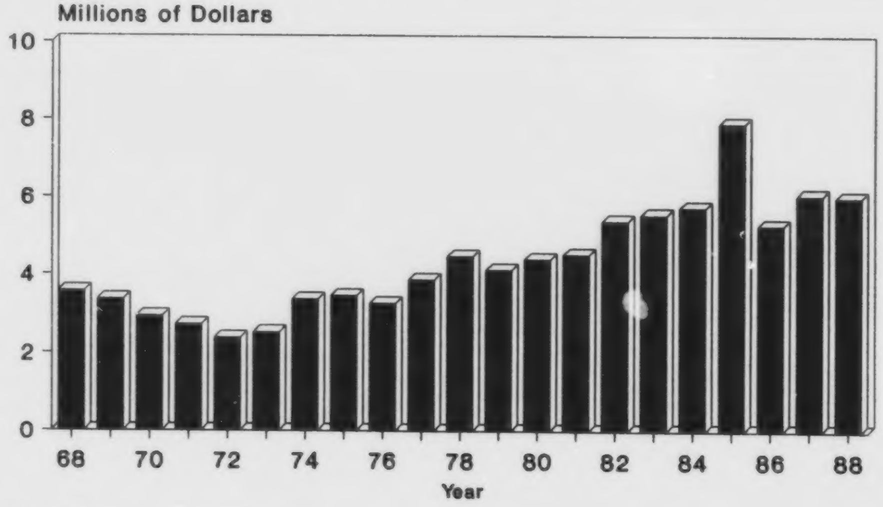
	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	BARRELS	CU M	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/CU M
1968	1 151	183	3 167	3 570	12 774	69.82
1969	1 162	185	3 117	3 362	12 031	65.13
1970	1 048	167	2 840	2 934	10 497	62.99
1971	958	152	2 727	2 727	9 756	64.05
1972	878	140	2 499	2 382	8 523	61.06
1973	809	129	2 866	2 521	9 018	70.15
1974	734	117	4 342	3 355	12 006	102.88
1975	704	112	5 046	3 444	12 324	110.11
1976	621	99	5 216	3 252	11 635	117.85
1977	617	98	6 627	3 860	13 810	140.85
1978	594	94	8 166	4 469	15 992	169.37
1979	579	92	8 259	4 115	14 724	160.04
1980	591	94	9 787	4 395	15 725	167.49
1981	566	90	11 112	4 512	16 142	179.39
1982	539	86	14 761	5 383	19 262	224.92
1983	533	85	16 110	5 546	19 842	234.02
1984	568	90	17 276	5 736	20 522	227.08
1985	710	113	24 737	7 891	28 232	249.95
1986	854	136	17 343	5 268	18 850	138.79
1987 (R)	854	136	20 720	6 051	21 651	159.63
1988 (P)	1 195	190	21 485	6 005	21 485	113.08
TOTAL	16 265	2 588		90 778	324 801	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION



VOLUME OF PRODUCTION OF PETROLEUM
IN ONTARIO

'88 - Preliminary



VALUE OF PRODUCTION OF PETROLEUM IN ONTARIO
(IN 1971 CONSTANT $)

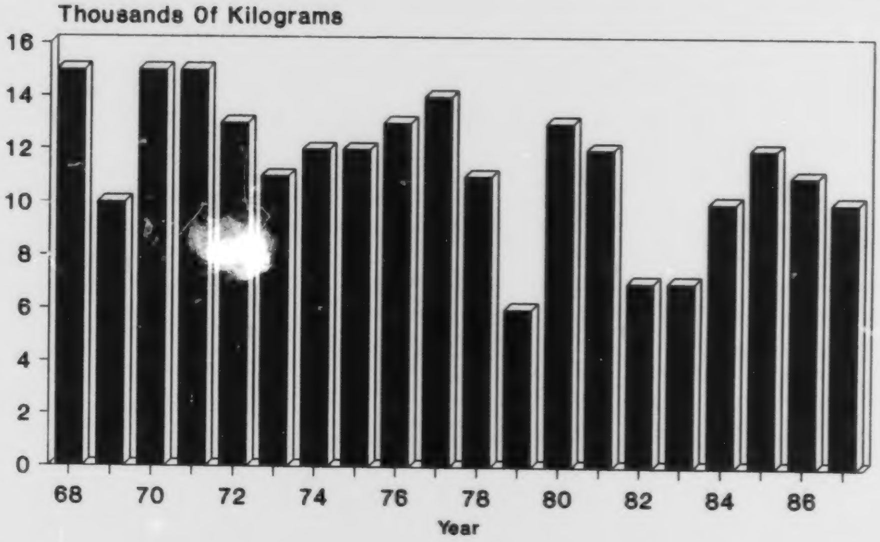
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF PLATINUM GROUP IN ONTARIO

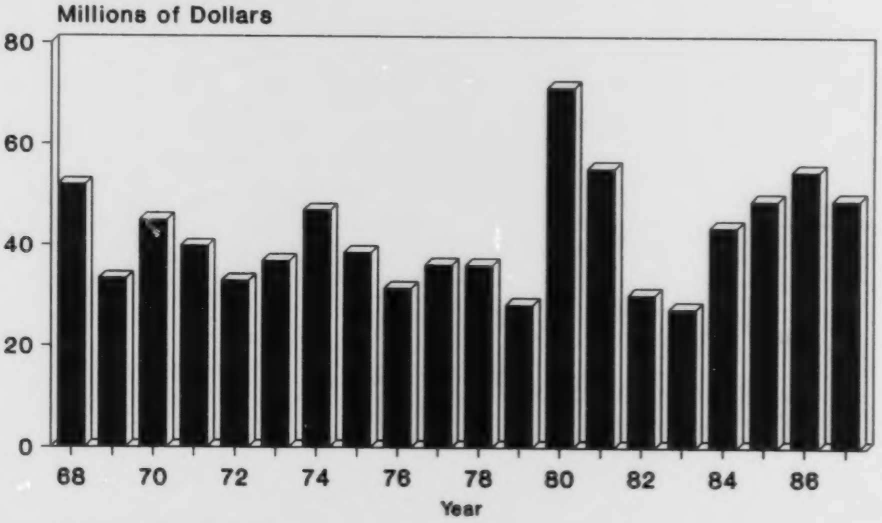
YEAR	VOLUME OF PRODUCTION IN 000'S TROY OUNCES	KG	VALUE OF PRODUCTION IN 000'S CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	UNIT VALUE 1988 DOLLARS/KG
1968	485	15	46 124	52 000	186 056	12 337.93
1969	308	10	30 730	33 150	118 610	12 362.91
1970	482	15	43 557	44 996	160 997	10 729.58
1971	475	15	39 822	39 822	142 482	9 640.82
1972	402	13	34 331	32 727	117 098	9 355.90
1973	353	11	41 844	36 802	131 679	11 996.98
1974	385	12	60 794	46 981	168 100	14 052.81
1975	399	12	56 493	38 562	137 974	11 111.72
1976	417	13	50 143	31 261	111 853	8 627.96
1977	465	14	61 988	36 103	129 176	8 924.67
1978	350	11	65 761	35 994	128 787	11 829.46
1979	198	6	56 334	28 069	100 429	16 314.04
1980	411	13	158 923	71 362	255 334	19 985.41
1981	383	12	136 239	55 314	197 915	16 624.52
1982	228	7	82 254	29 998	107 332	15 106.49
1983	224	7	79 156	27 248	97 494	13 999.68
1984	329	10	131 416	43 631	156 111	15 237.77
1985	373	12	153 626	49 004	175 335	15 122.88
1986	351	11	180 232	54 748	195 890	17 927.13
1987 (R)	316	10	167 984	49 061	175 539	17 882.95
1988 (P)	X	X	X	X	X	X
TOTAL	7 334	229		836 833	2 994 191	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF PLATINUM GROUP
IN ONTARIO



VALUE OF PRODUCTION OF PLATINUM GROUP IN ONTARIO
(IN 1971 CONSTANT $)



Source: Information & Statistics Section
MNDM

PLATINUM GROUP METALS (PGMs)

Platinum metals are classified as precious metals but are used primarily in the industrial sector as an automobile catalyst. Other areas which have experienced substantial growth and increased demand for PGMs are the jewelry, investment and electronics sectors. PGMs are considered irreplaceable in many defense applications. Since World War II governments have been stockpiling these materials for national defence purposes.

The platinum group metals include platinum, palladium, iridium, ruthenium, rhodium and osmium. These metals are among the scarcest of all metallic elements.

PGM's are produced as by-products from nickel-copper refining. They are also recovered from secondary sources such as used industrial catalysts and electronic scrap. In Canada, the two producers, INCO Limited and Falconbridge Limited, derive the bulk of their PGM production from their Ontario operations in the Sudbury Basin. Small amounts are also recovered by INCO at Thompson, Manitoba.

Canada ranks third in world production, accounting for an estimated 4.2% of world PGMs recovered in 1987. Ontario produced 10 000 kg of PGMs in 1987, valued at $168 million. This production represented 90.9% of Canada's total production volume and 92% of production value.

Exploration activity for PGMs intensified in 1987 due to a favorable investment climate, strong prices and promising geological developments. The most active area in Ontario was Lac des Iles near Thunder Bay. Other potential development opportunities in the Province include the Crystal Lake and Marathon deposits.

While in Canada, Ontario appears to have a number of promising prospects, South Africa will continue to hold a dominant position. In 1987, it was estimated that South Africa accounted for 81.3% of the western world's new deposits.

In the accompanying table, production includes recoverable metals in refinery products shipped for export.

Beginning in 1946, the platinum metals production is the assay content of concentrates and refinery residues shipped for export, plus the platinum group metal content of the matte shipped for export. Quantities are valued at average yearly industry price x volume.

QUARTZ

Quartz is a crystalline form of silica, used mainly as smelter flux, in glass and ceramics manufacture, cement and concrete products, foundry sands and chemicals. In all of its forms, it is one of the most abundant minerals in the earth's crust. In addition to its use as a building material and abrasive, the demand for the use of quartz in optical equipment and ceramics is increasing.

Quartz production in Ontario for 1987 increased by 12.5 % over 1986 to 342 000 tonnes with a production value exceeding $10 million. Ontario accounted for 17 % of Canada's production volume and 23.6 % of production value in 1987.

In Ontario, silica is quarried from quartzite deposits on Badgeley Island in Georgian Bay by Indusmin Limited Division of Falconbridge Limited. Lump quartzite is shipped from this location for the manufacture of ferrosilicon. The finer crushed material is shipped to the Company's Midland, Ontario processing plant for further processing and production of high-grade silica sand and silica flour.

Production of lump silica in Ontario was first undertaken by Union Carbide near Killarney in 1911. The Company continued to mine this deposit until 1968, at which time the quarry and equipment was purchased by Indusmin Limited and moved to its present Badgeley Island location. In response to increased demand for silica products in the 1960's the Company's Midland mill was built to process the quartzite.

In 1987, consumption increased in the flat glass and fibreglass industries primarily in response to the demand of the construction industry. Overall production in 1988 is expected to decline as the increased recycling of glass cullet and use of aluminum and paper products continue to affect the consumption in container glass manufacture.

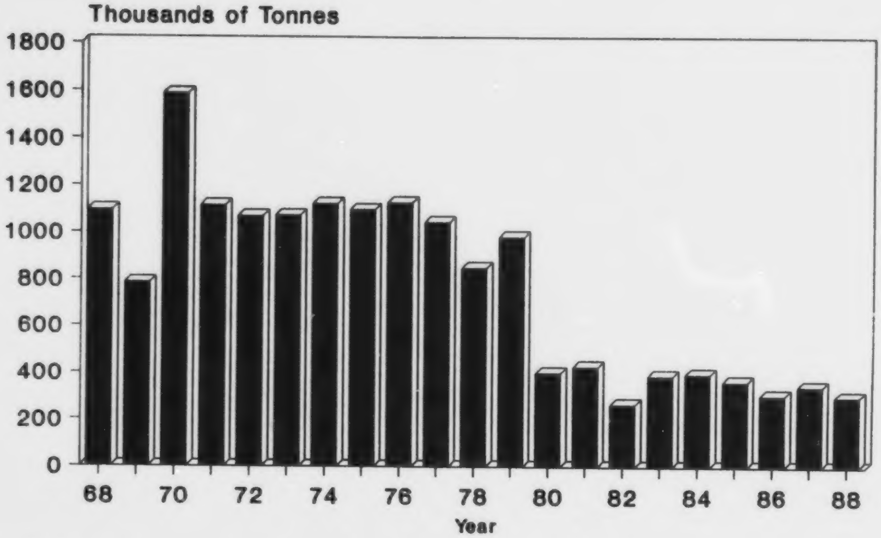
In the accompanying table, production represents the tonnage of crude or pulverized quartz, quartzite and pure silica sand shipped for sale, by the producer. The value is taken as reported by the producer.

VOLUME AND VALUE OF PRODUCTION OF QUARTZ IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	SHORT TONS	TONNE	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/TONNE
1968	1 206	1 094	573	646	2 313	2.11
1969	865	785	429	463	1 656	2.11
1970	1 748	1 586	1 212	1 252	4 479	2.82
1971	1 228	1 114	2 141	2 141	7 661	6.87
1972	1 178	1 068	2 750	2 622	9 381	8.78
1973	1 181	1 072	3 361	2 956	10 575	9.87
1974	1 237	1 122	3 850	2 975	10 645	9.49
1975	1 208	1 096	4 358	2 975	10 644	9.71
1976	1 242	1 127	5 203	3 244	11 607	10.30
1977	1 150	1 043	6 129	3 570	12 772	12.24
1978	933	847	6 978	3 820	13 666	16.14
1979	1 081	980	8 965	4 467	15 983	16.30
1980	440	399	8 235	3 698	13 231	33.18
1981	471	427	9 787	3 974	14 218	33.28
1982	292	265	7 759	2 830	10 125	38.22
1983	426	387	10 560	3 635	13 006	33.63
1984	434	394	10 631	3 530	12 629	32.09
1985	399	362	9 904	3 159	11 303	31.24
1986	335	304	9 230	2 804	10 032	32.98
1987 (R)	377	342	10 180	2 973	10 637	31.13
1988 (P)	329	298	8 430	2 356	8 430	28.28
TOTAL	17 760	16 112		60 090	214 993	

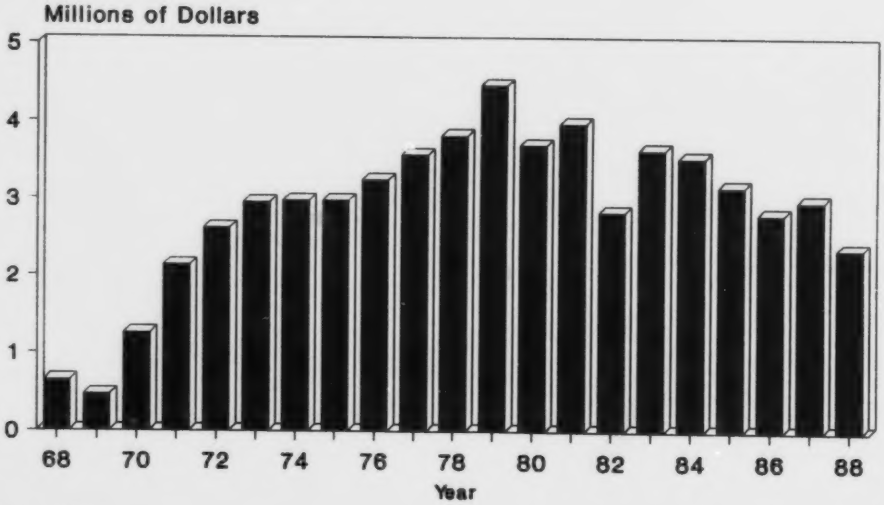
SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF QUARTZ
IN ONTARIO



'88 - Preliminary

VALUE OF PRODUCTION OF QUARTZ IN ONTARIO
(IN 1971 CONSTANT $)



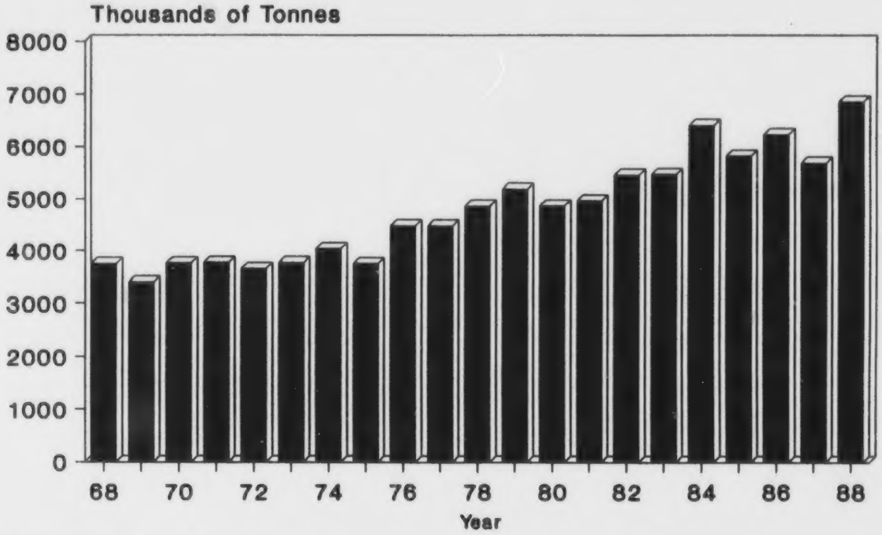
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF SALT IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	SHORT TONS	TONNE	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/TONNE
1968	4 144	3 759	21 606	24 358	87 155	23.18
1969	3 760	3 411	19 104	20 609	73 738	21.62
1970	4 158	3 772	22 700	23 450	83 906	22.24
1971	4 171	3 784	24 121	24 121	86 306	22.81
1972	4 038	3 663	24 481	23 338	83 503	22.80
1973	4 161	3 775	33 166	29 170	104 370	27.65
1974	4 456	4 043	40 170	31 043	111 072	27.47
1975	4 148	3 763	32 259	22 020	78 787	20.94
1976	4 948	4 489	52 493	32 726	117 094	26.08
1977	4 946	4 486	57 141	33 280	119 074	26.54
1978	5 363	4 865	61 679	33 760	120 793	24.83
1979	5 720	5 189	67 900	33 832	121 050	23.33
1980	5 369	4 871	71 401	32 061	114 715	23.55
1981	5 477	4 969	80 889	32 841	117 507	23.65
1982	6 020	5 461	93 200	33 990	121 616	22.27
1983	6 041	5 480	98 726	33 985	121 598	22.19
1984	7 068	6 412	131 720	43 732	156 472	24.40
1985	6 425	5 829	125 233	39 947	142 930	24.52
1986	6 879	6 240	147 686	44 862	160 516	25.72
1987 (R)	6 273	5 690	139 326	40 691	145 592	25.59
1988 (P)	7 565	6 863	158 440	44 282	158 440	23.09
TOTAL	111 130	100 814		678 098	2 426 234	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF SALT
IN ONTARIO



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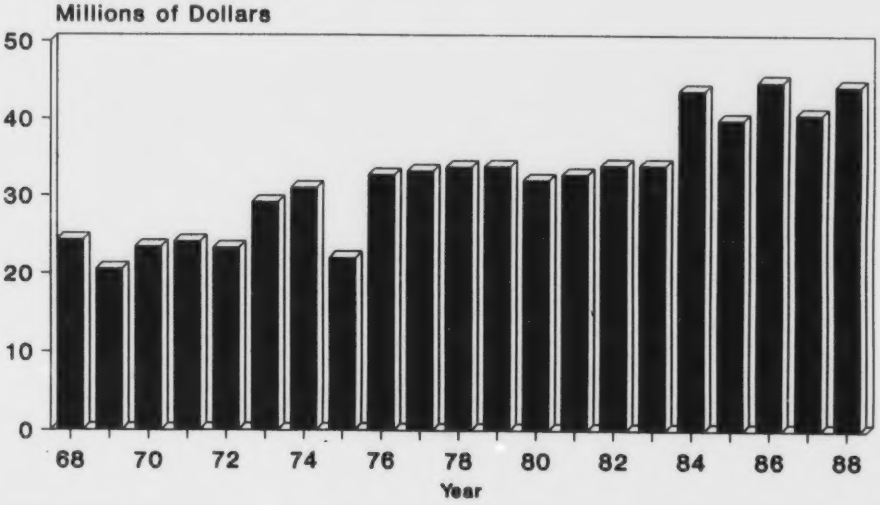
VALUE OF PRODUCTION OF SALT IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

SALT

Salt is a very common mineral, and one of the few with unlimited resources. Although it is produced in many countries, five of these countries (United States, USSR, China, West Germany and Canada) account for over 50% of total world production. As well as being one of the world's major salt producers, Canada is the largest per capita consumer (359 kg/person/year). Mineralogically known as Halite, salt, in its purest form, is composed of 39.34% sodium and 60.66% chlorine by weight.

Consumption patterns for salt vary geographically. In Canada, during 1987, 48.8% of salt production was used in snow and ice control, 47.2% in the industrial chemicals sector and 4% in the food industry, fishery industry, animal diet and water treatment.

Ontario salt production in 1987 approached 5.7 million tonnes and was valued at $139.3 million. Rock salt comprised 69.6% of this total volume and 71.3% of value with the remaining production resulting from brine operations. The latter represented 56% and 58% of Canada's total production volume and value respectively. The salt beds in Ontario, bordering on the Michigan Basin, extend from Amherstburg, northeast to London and Kincardine. Initial extraction of salt in Canada commenced in 1880 as a brining operation at Goderich, Ontario.

Salt cannot be classified as a standard commodity and therefore its price ranges depend on purity, production methods, transportation costs and scale of operations. Within Ontario, the industry is comprised of 4 companies; General Chemical Canada Ltd., The Canadian Salt Company, Domtar Inc. and Dow Chemical Canada Ltd. These companies operate 2 rock salt mines in Goderich and Ojibway and 4 brining operations located at Goderich, Sarnia, Windsor and Amherstburg.

Present production capacity is sufficient to satisfy requirements for the next decade. Growth in the industrial chemical sector, primarily in the production of chloralkali, will result in increased demand for salt, thereby compensating for slow growth in the mature de-icing salt market.

In the accompanying table, production is taken as the tonnage of various grades of dry salt shipped by primary producers, plus salt content of brine used by producers for industrial (chemical) purposes. The value is as reported by producers.

SAND AND GRAVEL

In 1987, Ontario produced 35% of Canada's total sand and gravel. Production in Ontario was valued at $295 million representing a 19% increase over 1986. Total production is further subdivided into sand representing 33% of the value of production, natural gravel at 21% and crushed gravel at 46% (these are 1986 ratios, 1987 values n.a.) In Ontario, sand and gravel is consumed in road construction (50%), concrete aggregate (20%), fill (16%) and other uses (14%).

In the Toronto area, the demand for sand and gravel has increased by 15 to 20% per year for the last 4 years. In 1987, commercial and residential construction in Metropolitan Toronto consumed 70 million tonnes of aggregates and a similar volume is expected to be sold in 1988. About 300 tonnes of aggregate are needed in the construction of an average size house.

Ontario exported 500 000 tonnes of sand and gravel, mainly to U.S. markets in 1987 and imported 100 000 tonnes.

While there are considerable reserves of natural sand and gravel, good quality deposits are being rapidly depleted near to urban areas. More than 90% of the quarries in Canada are located near urban centres in Ontario and Quebec.

A 5% decrease in tonnage is expected in 1988 mainly due to a decrease in residential construction in Ontario. While there was a 29% increase in housing starts from 1986 to 1987, they have dropped by 5% from 1987 to 1988.

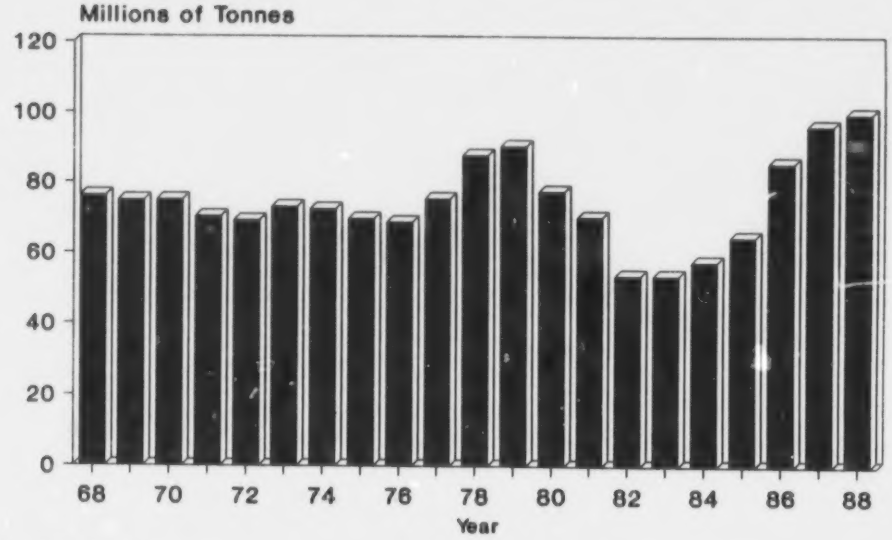
In the table, production represents shipments at the values reported by operators of sand and gravel pits or dredges.

VOLUME AND VALUE OF PRODUCTION OF SAND & GRAVEL IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S SHORT TONS	TONNE	VALUE OF PRODUCTION IN 000'S CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	UNIT VALUE 1988 DOLLARS/TONNE
1968	84 096	76 290	55 095	62 114	222 242	2.91
1969	82 657	74 986	46 246	49 887	178 497	2.38
1970	82 877	75 185	54 419	56 218	201 148	2.68
1971	77 631	70 426	57 104	57 104	204 318	2.90
1972	76 380	69 291	64 320	61 316	219 387	3.17
1973	80 568	73 090	74 408	65 443	234 154	3.20
1974	79 985	72 561	85 518	66 088	236 463	3.26
1975	76 837	69 705	95 579	65 242	233 434	3.35
1976	75 841	68 802	106 093	66 143	236 660	3.44
1977	83 115	75 400	121 776	70 924	253 765	3.37
1978	96 833	87 846	142 743	78 130	279 549	3.18
1979	99 776	90 516	151 847	75 659	270 708	2.99
1980	85 518	77 596	133 980	60 162	215 258	2.77
1981	77 373	70 206	134 435	54 582	195 294	2.78
1982	59 048	53 568	116 552	42 506	152 087	2.84
1983	59 064	53 602	120 232	41 388	148 086	2.76
1984	63 294	57 446	136 125	45 194	161 705	2.81
1985	71 101	64 502	158 347	50 509	180 723	2.80
1986	94 280	85 512	248 185	75 390	269 747	3.15
1987 (R)	105 957	96 122	294 689	86 066	307 943	3.20
1988 (P)	109 845	99 650	288 985	80 767	288 985	2.90
TOTAL	1 722 076	1 562 302		1 310 832	4 690 153	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF SAND & GRAVEL
IN ONTARIO



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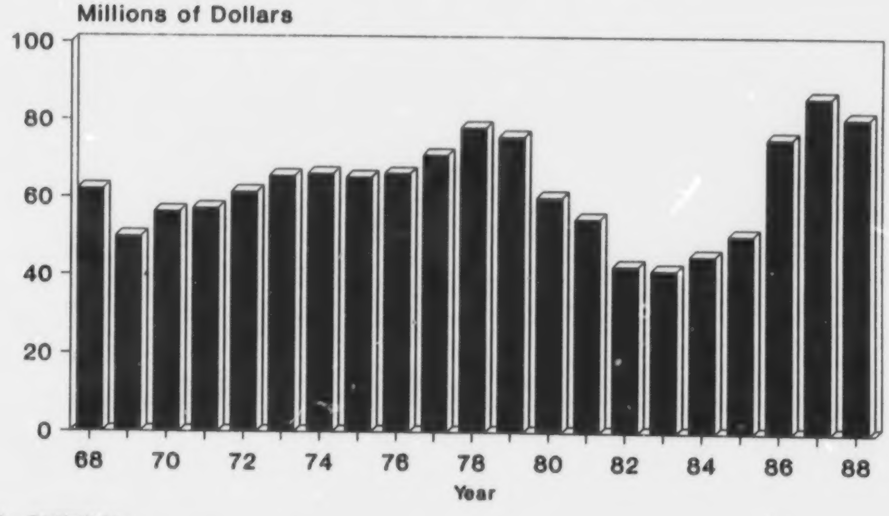
VALUE OF PRODUCTION OF SAND & GRAVEL IN ONTARIO
(IN 1971 CONSTANT $)



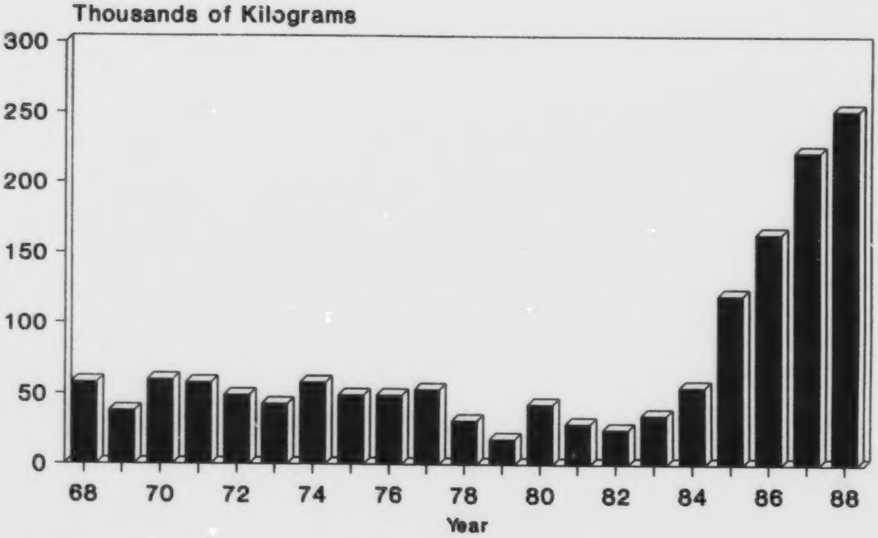
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF SELENIUM IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S POUNDS	KG	VALUE OF PRODUCTION IN 000'S CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	UNIT VALUE 1988 DOLLARS/KG
1968	128	58	618	697	2 494	43.13
1969	84	38	480	518	1 855	48.67
1970	132	60	1 131	1 168	4 180	70.08
1971	128	58	1 164	1 164	4 163	71.70
1972	109	49	969	924	3 306	67.00
1973	95	43	868	763	2 731	63.41
1974	129	58	2 024	1 564	5 596	96.01
1975	108	49	1 972	1 346	4 816	98.59
1976	108	49	1 924	1 200	4 292	87.29
1977	117	53	2 129	1 240	4 436	83.46
1978	69	31	1 187	650	2 326	73.87
1979	40	18	581	290	1 036	56.56
1980	95	43	1 069	480	1 717	39.85
1981	63	29	680	276	988	34.56
1982	55	25	274	100	357	14.28
1983	78	35	335	115	412	11.69
1984	120	55	1 106	367	1 314	24.08
1985	265	120	2 625	837	2 996	24.90
1986	361	164	2 391	726	2 598	15.87
1987 (R)	488	222	4 195	1 225	4 384	19.79
1988 (P)	556	252	6 954	1 943	6 954	27.55
TOTAL	3 328	1 509		17 593	62 951	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF SELENIUM
IN ONTARIO



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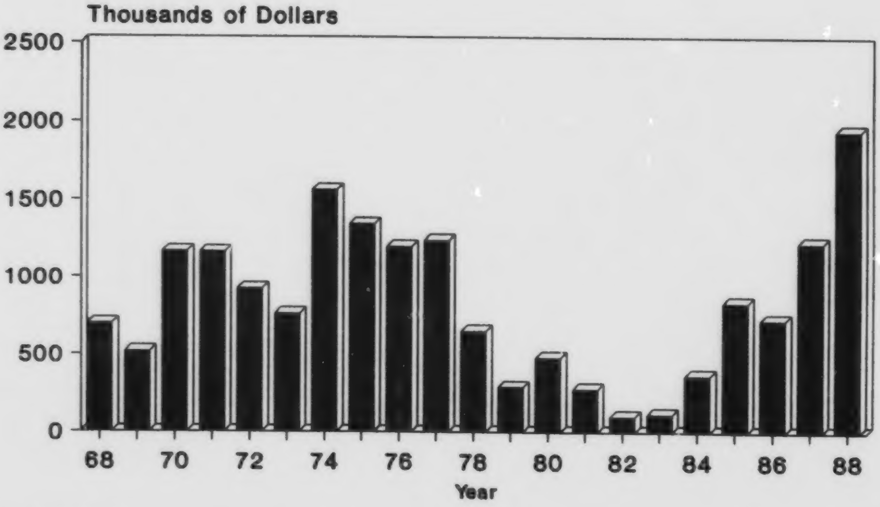
VALUE OF PRODUCTION OF SELENIUM IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

SELENIUM

Canada produced in excess of 430 000 kg of selenium in 1987, of which 222 000 kg, or 52 %, was recovered from operations in Ontario. Selenium, a semi-conductor material recovered from electrolytic slimes in the refining of copper, is used primarily in the photoreceptor and glass manufacturing industries. Other uses include the manufacture of electronic components, steel, batteries and pigments. Most of the selenium produced in Canada is exported to the United States and to the United Kingdom.

From 1986 to 1987 the production value for selenium in the Province increased by 75 %, to $4.2 million. In this same period, output increased by 35 %. Selenium recovery is dependent on primary copper production and the operating rates at the copper refineries.

The demand for selenium has surpassed production for the past few years. This supply deficit has been compensated by using available industry stocks.

Selenium content of coal deposits is believed to be 80 times the content of identified copper deposits. However, recovery from this source shows little potential in the near future

In the accompanying table, the value is based on the average yearly industry price x volume.

SILVER

Silver production in Ontario jumped from 362 tonnes in 1986 to 438 tonnes in 1987 representing an increase of 21%. The rise is mainly due to increased silver output from Falconbridge's Kidd Creek Mine and Agnico-Eagle's new mill. Ontario is Canada's largest producer of silver and contributes 35% of the national silver output. The principal producers of silver in the world are Mexico (18%), Peru (15%), the U.S.S.R. (11%) and Canada (9%). Ontario's output represents 3% of the world's silver production.

In 1911, silver production peaked with Ontario mines producing about 980 tonnes. In that year, 95% of the Province's silver output came from the silver-cobalt mines of the Cobalt area mining camp. Silver production dropped to below 100 tonnes from 1943 and 1949, the lowest in the period from 1906 to 1988. In 1987, silver from base metal mines accounted for 95% of total production. The remainder was produced from silver and silver-cobalt mines and gold mines.

Silver prices in 1987 averaged Cdn$9.60 per troy ounce ($308.42 per kg) up from 1986 prices of Cdn$7.86 per troy ounce ($252.77 per kg). This was the first time that the average silver price rose in four years. Silver is mainly used in photographic materials and to a lesser extent in electronic products, coinage and silverware.

Silver production in the table includes:

(a) silver in crude bullion obtained direct from lode gold mines
(b) silver in blister copper made at copper smelters
(c) silver in base bullion made at lead refineries
(d) silver in all types of ores shipped for export
(e) silver in nickel-copper matte shipped for export
(f) silver in platinum-palladium concentrates shipped for export.

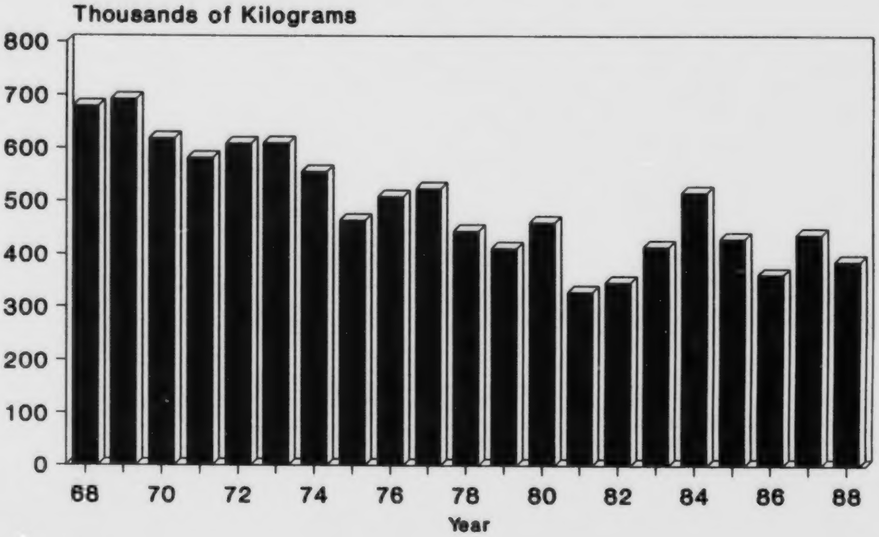
Total silver as a compound from above, is valued at the average yearly industry price times volume.

VOLUME AND VALUE OF PRODUCTION OF SILVER IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	TROY OUNCES	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	21 845	679	50 527	56 963	203 815	299.97
1969	22 260	692	42 963	46 346	165 826	239.50
1970	19 876	618	36 771	37 987	135 917	219.85
1971	18 682	581	29 143	29 143	104 275	179.46
1972	19 588	609	32 711	31 183	111 574	183.14
1973	19 617	610	49 554	43 583	155 939	255.57
1974	17 852	555	82 639	63 863	228 502	411.51
1975	14 908	464	67 176	45 854	164 066	353.82
1976	16 317	508	70 131	43 723	156 440	308.24
1977	16 857	524	82 938	48 304	172 831	329.63
1978	14 287	444	88 162	48 255	172 657	388.55
1979	13 244	412	171 833	85 617	306 337	743.63
1980	14 822	461	335 566	150 681	539 136	1169.42
1981	10 570	329	136 969	55 611	198 975	605.19
1982	11 155	347	118 680	43 282	154 864	446.33
1983	13 333	415	197 917	68 130	243 768	587.82
1984	16 607	517	163 233	54 194	193 907	375.41
1985	13 828	430	116 942	37 302	133 467	310.32
1986	11 624	362	91 203	27 704	99 126	274.18
1987 (R)	14 084	438	135 102	39 457	141 178	322.29
1988 (P)	12 410	386	95 583	26 714	95 583	247.62
TOTAL	333 766	10 381		1 083 896	3 878 183	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF SILVER
IN ONTARIO



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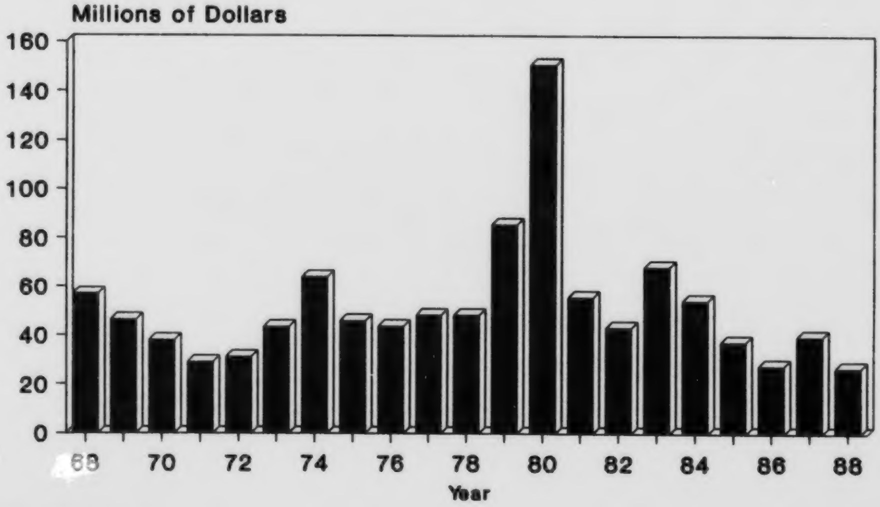
VALUE OF PRODUCTION OF SILVER IN ONTARIO
(IN 1971 CONSTANT $)



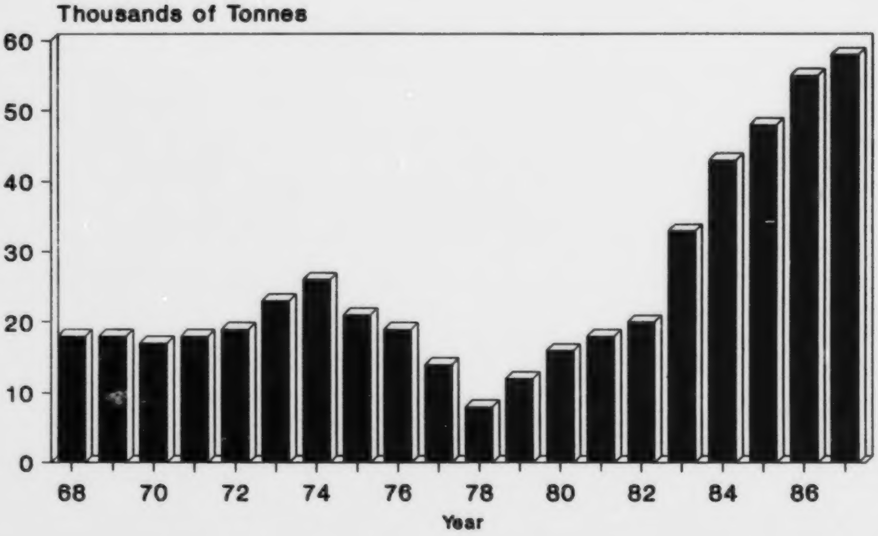
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF SOAPSTONE, TALC IN ONTARIO

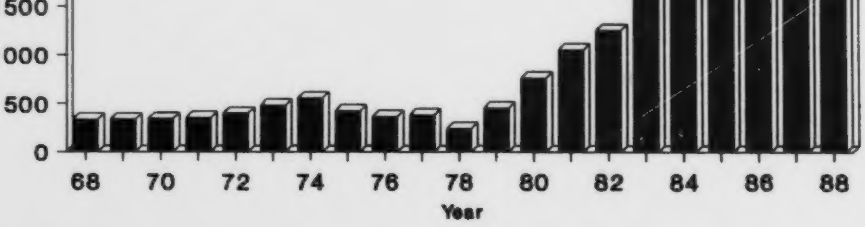
	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	SHORT TONS	TONNE	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/TONNE
1968	20	18	299	337	1 206	65.64
1969	20	18	315	340	1 217	66.20
1970	19	17	335	346	1 238	71.41
1971	19	18	353	353	1 261	71.60
1972	21	19	418	398	1 425	75.25
1973	25	23	551	484	1 733	77.04
1974	29	26	723	559	1 999	76.99
1975	23	21	624	426	1 525	73.05
1976	20	19	587	366	1 309	70.44
1977	16	14	660	385	1 376	97.51
1978	9	8	440	241	862	102.83
1979	13	12	914	456	1 630	134.17
1980	18	16	1 698	762	2 727	167.19
1981	20	18	2 592	1 052	3 765	206.53
1982	23	20	3 434	1 252	4 481	218.98
1983	36	33	6 060	2 086	7 464	227.03
1984	47	43	8 505	2 824	10 104	235.99
1985	52	48	9 624	3 070	10 984	230.87
1986	61	55	10 524	3 197	11 438	208.03
1987 (R)	64	58	9 632	2 813	10 065	172.10
1988 (P)	X	X	11 870	3 467	11 870	N/A
TOTAL	555	504		21 747	77 809	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF SOAPSTONE,TALC
IN ONTARIO



VALUE OF PRODUCTION OF SOAPSTONE,TALC IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

SOAPSTONE/TALC

Talc production in Ontario has steadily increased since 1978, averaging a 21 % annual increase in output from 1978 to 1987. Talc is produced commercially in Ontario and Quebec, with two operations in each of these provinces. In Ontario, talc is produced in the Madoc area by Canada Talc Industries Limited and near Timmins by Luzenac Inc., formerly Steetley Talc Inc. The Canadian market for talc has risen as a result of new capacity and aggressive marketing, primarily in the United States.

Canada Talc's Madoc mine has been operating since 1896 and is the oldest mine in continuous operation in Canada. The deposit was mined as an open pit until 1908, at which time the first shaft was sunk. The extraction of talc in the Timmins area was first carried out by the Johns Manville Corporation in 1976. In 1978, Steetley Industries Limited acquired the property, mine and plant, significantly expanding the production of talc products. In 1988, Steetley Talc Inc. was acquired by Talc de Luzenac, the world's largest producer of talc. The open pit mining operation is now known as Luzenac Inc.

Talc is mainly used as a filler in paper products, rubber, plastic, paints and sealants. Talc is valued for its whiteness, smoothness, high fusion point, low thermal and chemical conductivity and chemical inertness.

From 1986 to 1987, Ontario's talc production increased by 5%, accounting for 43 % of Canada's production output. The prospects for the talc industry look promising. Talc consumption is expected to grow at a faster rate than the economy, in response to the increased demand for its use in automotive applications, plastics, paper products and ceramics.

In the accompanying table, production represents the tonnage of any crude talc shipped, plus any milled or refined talc shipped from mills operated in conjunction with the mines. The value is taken as reported by the mine and mill operators.

STONE

The production of stone in Ontario during 1987 reached nearly 62 million tonnes, attaining a value of $272 million. Ontario's production represented 50 % of the total volume of stone quarried in Canada. The demand for stone is strongly influenced by trends in the construction industry, which is closely tied to a variable economic cycle. The demand for crushed stone and building stone in the construction industry has shown considerable growth over the past few years. Many quarry operations are operated as subsidiaries of construction or manufacturing establishments.

Approximately 90% of the stone is utilized as crushed stone for construction and related activities. While building stone commands less than 1% of the total volume of stone produced in the Province, its unit value and importance in the market is steadily increasing. Ontario is currently assessing its building stone reserves and prospects in view of expanding its position and recognition in the market.

Crushed aggregate material is used primarily in the construction industry for road building, and in commercial and industrial development applications. Over the past four years Ontario's construction industry has enjoyed strong market conditions, which have been directly responsible for the increased growth and demand for crushed stone and building stone in the Province. The importance of the stone industry and its dependence on the construction sector is considerable. In 1987, an estimated $26 billion dollars in capital spending was attributed to the construction industry in Ontario. The demand for stone and stone products is expected to continue to grow over the next few years as the construction industry continues to prosper.

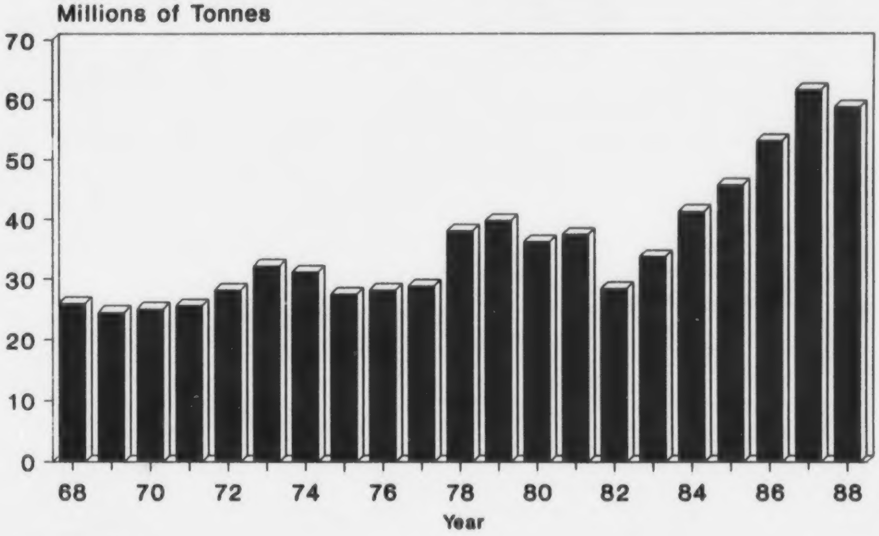
In the accompanying table, production represents quarry shipments of crude or undressed stone, crushed stone and dressed stone, if the latter is prepared by the quarry operators. Values are as reported by the operators.

VOLUME AND VALUE OF PRODUCTION OF STONE IN ONTARIO

YEAR	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
	SHORT TONS	TONNE	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/TONNE
1968	28 636	25 978	37 734	42 541	152 212	5.86
1969	27 035	24 525	32 294	34 837	124 645	5.08
1970	27 673	25 105	34 447	35 586	127 326	5.07
1971	28 238	25 618	38 484	38 484	137 694	5.38
1972	31 091	28 206	41 231	39 305	140 632	4.99
1973	35 539	32 241	52 870	46 499	166 375	5.16
1974	34 460	31 261	60 916	47 076	168 438	5.39
1975	30 342	27 526	62 250	42 491	152 034	5.52
1976	31 047	28 165	71 861	44 801	160 297	5.69
1977	31 823	28 869	77 884	45 361	162 300	5.62
1978	42 041	38 139	101 623	55 623	199 018	5.22
1979	43 906	39 831	113 478	56 541	202 304	5.08
1980	39 690	36 304	123 388	55 405	198 241	5.46
1981	41 388	37 546	126 906	51 525	184 356	4.91
1982	31 372	28 460	110 785	40 403	144 562	5.08
1983	37 293	33 832	143 479	49 390	176 719	5.22
1984	45 621	41 387	179 480	59 588	213 207	5.15
1985	50 546	45 854	211 666	67 517	241 577	5.27
1986 (R)	58 720	53 270	242 885	73 780	263 985	4.96
1987 (R)	68 017	61 704	272 081	79 463	284 319	4.61
1988 (P)	64 926	58 900	298 000	83 287	298 000	5.06
TOTAL	829 404	752 721		1 089 503	3 898 241	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF STONE
IN ONTARIO



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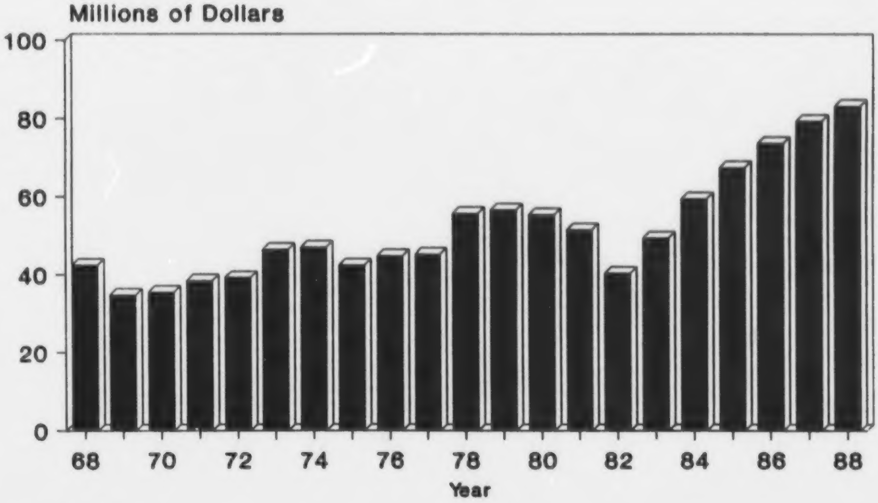
VALUE OF PRODUCTION OF STONE IN ONTARIO
(IN 1971 CONSTANT $)



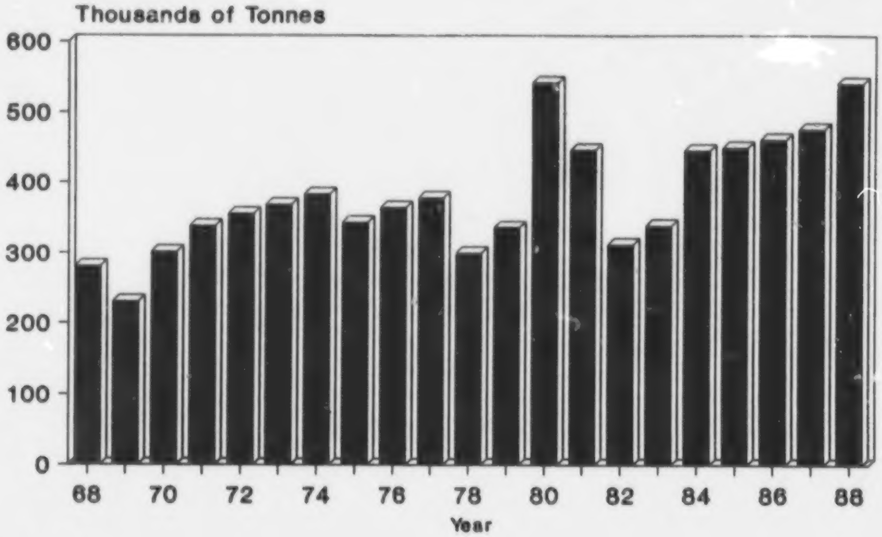
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF SULPHUR IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	SHORT TONS	TONNE	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/TONNE
1968	309	281	4 676	5 272	18 863	67.21
1969	253	230	3 393	3 660	13 097	57.04
1970	331	301	3 097	3 200	11 448	38.09
1971	373	338	3 406	3 406	12 187	36.05
1972	391	355	3 448	3 287	11 762	33.15
1973	405	368	5 437	4 782	17 110	46.55
1974	422	383	5 662	4 376	15 656	40.90
1975	379	343	4 770	3 256	11 651	33.92
1976	402	364	9 597	5 983	21 408	58.76
1977	416	378	7 935	4 621	16 535	43.77
1978	331	300	5 135	2 811	10 057	33.52
1979	371	336	6 894	3 435	12 291	36.55
1980	597	542	13 441	6 035	21 595	39.87
1981	493	447	18 578	7 543	26 989	60.40
1982	344	312	17 588	6 414	22 951	73.63
1983	373	339	19 710	6 785	24 277	71.67
1984	491	446	35 591	11 816	42 279	94.90
1985	496	450	38 257	12 203	43 663	97.03
1986	508	461	30 862	9 375	33 543	72.72
1987 (R)	525	476	44 779	13 078	46 793	98.24
1988 (P)	596	541	44 147	12 338	44 147	81.65
TOTAL	8 806	7 991		133 676	478 302	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF SULPHUR
IN ONTARIO



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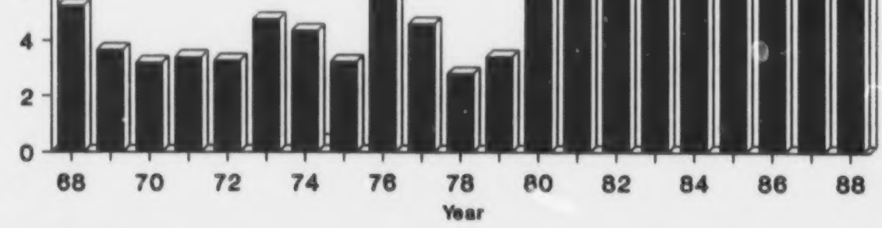
VALUE OF PRODUCTION OF SULPHUR IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

SULPHUR

In Ontario, over 99% of sulphur production is recovered as sulphuric acid from base metal smelting. Only minor amounts of elemental sulphur are derived from sour gas operations. In 1987, the value of sulphur production in Ontario represented 8% of Canada's total value. While the volume of sulphur production in the Province increased only by 3% from 1986 to 1987, the value increased by 45% in that period.

Production of sulphur peaked in 1980 at 540 000 tonnes and has remained relatively stable since 1984, averaging 458 250 tonnes annually.

In 1986, Canada consumed 1 million tonnes or 14% of its production. Sulphuric acid in Canada is used mainly in fertilizers and chemicals (68%), by pulp and paper mills (11%) and by uranium mines (10%).

Canada is the second largest producer of sulphur in the world producing about 12% of the world's total output in 1987. Canada is also the world's largest exporter of sulphur exporting mainly to the U.S.S.R., Morocco and the United States. In 1987, Canada exported $911 million of sulphur.

In the table, production represents sulphur in smelter gas, prior to final metal recovery. Metal recovery sulphide concentrates are smelted or roasted and the resultant gases may be used to produce a marketable sulphur dioxide or sulphuric acid. Production is considered as the sulphur dioxide marketed. This sulphur is valued at the average price for sulphur in pyrite concentrates. In 1987, there was some production of elemental sulphur form oil refineries in Ontario.

TELLURIUM

Tellurium is a co-product of selenium recovery and similarly recovered as a by-product from copper anode slimes in the electrolytic refining of copper.

In 1987, Ontario's production was 1 000 kg, or 7.7 % of Canada's production. Tellurium is extracted from approximately one third of the copper ores refined in the Country and sold in the form of slab, stick, lump, tablet or powder.

It is used primarily as an additive to ferrous and non-ferrous alloys to improve their metallurgical properties and machineability. Other applications include its use in rubber compounding, as a semi-conductor, and in the manufacture of pigments and germicides.

Much of the tellurium in the world's processed copper ores is not recovered as extractive processes at many copper refineries are designed primarily to recover gold and silver.

In the short term, demand for tellurium is expected to grow. However, with the introduction of new applications, such as its use in photovoltaic cells. Increased demand may justify improving higher recovery rates.

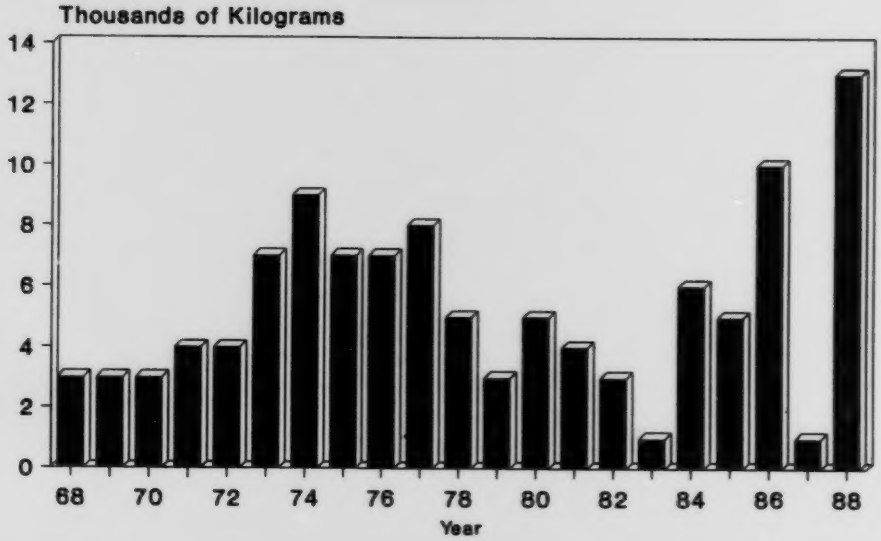
In the accompanying table, value is based on the average yearly industry price x volume.

VOLUME AND VALUE OF PRODUCTION OF TELLURIUM IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	7	3	43	48	172	57.46
1969	6	3	36	39	140	54.98
1970	7	3	46	47	170	51.10
1971	8	4	49	49	176	47.80
1972	8	4	49	47	169	44.67
1973	15	7	93	82	293	42.12
1974	19	9	158	122	437	49.50
1975	15	7	145	99	353	50.94
1976	16	7	158	98	352	50.12
1977	18	8	325	189	678	83.98
1978	12	5	267	146	523	98.50
1979	7	3	162	81	288	92.11
1980	11	5	247	111	396	80.74
1981	10	4	160	65	232	52.15
1982	6	3	94	34	122	43.06
1983	3	1	35	12	43	33.75
1984	12	6	149	49	177	32.01
1985	11	5	159	51	182	37.79
1986	23	10	355	108	386	37.45
1987 (R)	2	1	31	9	33	32.65
1988 (P)	28	13	488	136	488	38.85
TOTAL	244	111		1 622	5 810	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF TELLURIUM
IN ONTARIO



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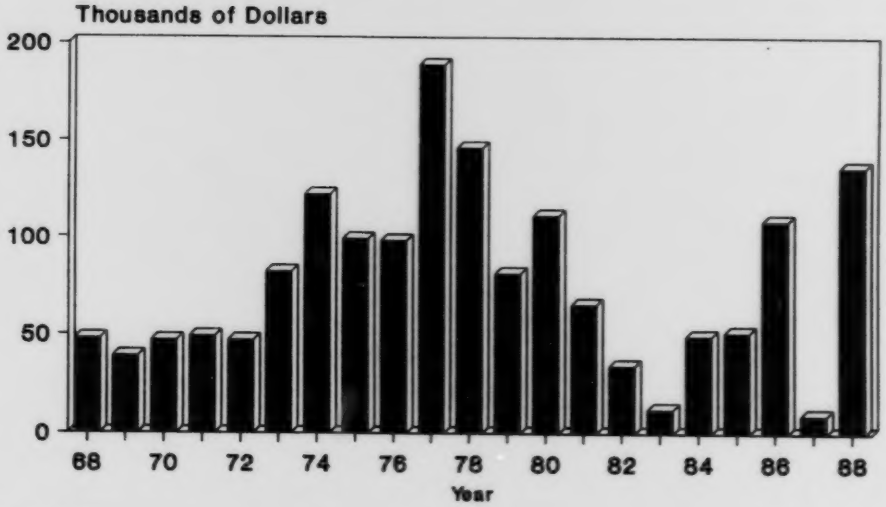
VALUE OF PRODUCTION OF TELLURIUM IN ONTARIO
(IN 1971 CONSTANT $)



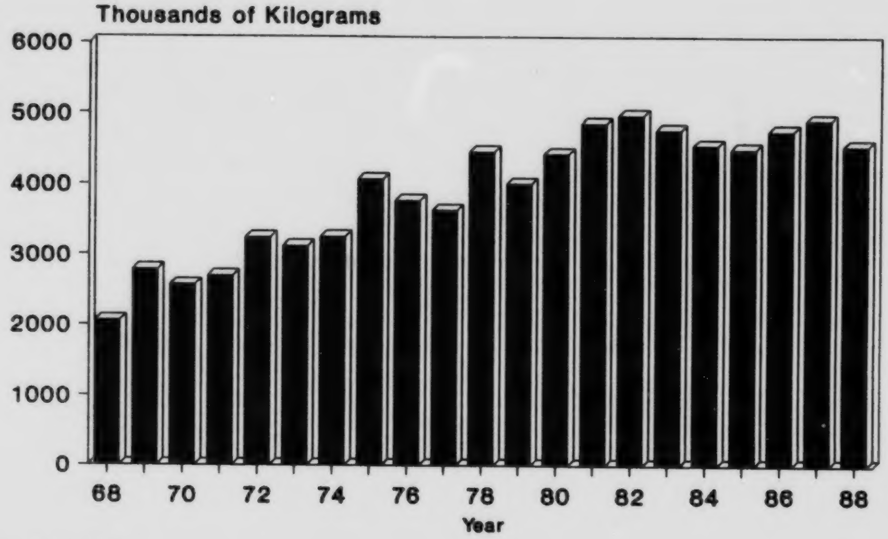
'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF PRODUCTION OF URANIUM (U)
IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	4 547	2 062	39 164	44 153	157 980	76.60
1969	6 140	2 785	40 307	43 482	155 577	55.86
1970	5 662	2 568	44 946	46 432	166 133	64.69
1971	5 945	2 696	44 627	44 627	159 675	59.22
1972	7 147	3 242	60 827	57 986	207 475	64.00
1973	6 881	3 121	65 209	57 351	205 203	65.74
1974	7 160	3 248	91 266	70 530	252 358	77.70
1975	8 963	4 066	164 150	112 048	400 906	98.61
1976	8 302	3 766	186 439	116 234	415 884	110.44
1977	7 998	3 628	250 689	146 004	522 402	143.99
1978	9 821	4 455	363 840	199 146	712 544	159.95
1979	8 830	4 005	375 793	187 241	669 949	167.26
1980	9 764	4 429	464 100	208 397	745 644	168.35
1981	10 713	4 859	522 012	211 942	758 327	156.05
1982	10 958	4 970	586 623	213 940	765 477	154.01
1983	10 510	4 767	535 770	184 430	659 892	138.43
1984	10 036	4 552	544 778	180 869	647 150	142.16
1985	9 920	4 499	552 561	176 256	630 642	140.16
1986	10 476	4 752	566 134	171 973	615 318	129.49
1987 (R)	10 805	4 901	581 294	169 770	607 439	123.94
1988 (P)	10 016	4 543	523 430	146 291	523 430	115.22
TOTAL	180 594	81 914		2 789 102	9 979 405	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF URANIUM(U)
IN ONTARIO



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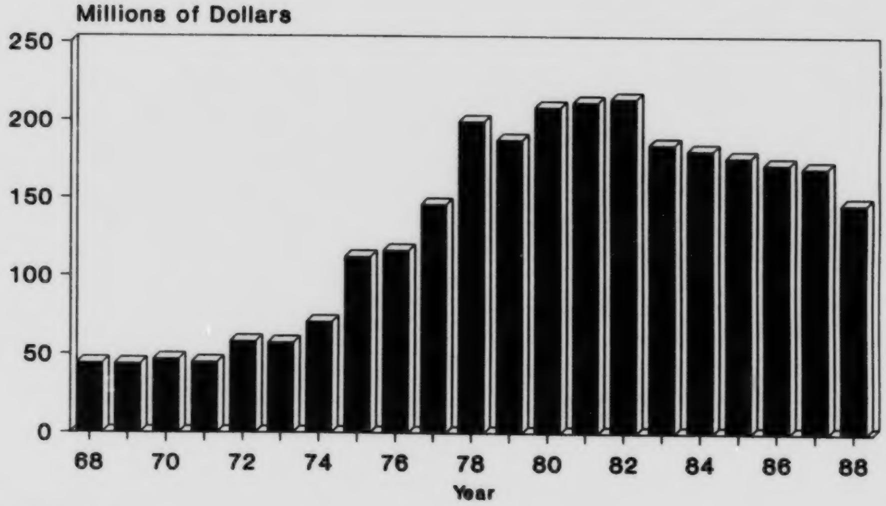
VALUE OF PRODUCTION OF URANIUM(U) IN ONTARIO
(IN 1971 CONSTANT $)



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Source: Information & Statistics Section
MNDM

URANIUM

World demand for uranium accelerated with the harnessing of nuclear energy to produce electricity and weapons. A reduction in world economic growth, negative attitudes towards nuclear power plant construction and the uranium mining boom in the 1970's, resulted in a world uranium surplus in the 1980's. In spite of this, Canada ranks in the top ten countries in uranium usage, with 6 operational nuclear power plants. Ontario Hydro currently operates 4 plants in the Province with the Darlington Plan expected to be fully operational by 1992.

The operations at Elliot Lake in Ontario were Canada's first major uranium suppliers, commencing production in 1958. In 1987, Ontario's production[1] totaled nearly 5 million kg at a value of 581 million dollars. This represented a 4% increase in volume and 3% increase in value over 1986. Nationally, Ontario uranium accounted for 36.3% and 49.3% of total production volume and value respectively.

Nuclear plants generated 47.5% of Ontario's total electrical power in 1987. The balance was attributable to fossil fuels 23.9%, hydraulic generation 23.8% and purchases 4.8%. New extraction and ore-mining methods, intended to increase efficiency at existing mines and develop new deposits, continued to be key issues for Ontario's operators, Denison Mines and Rio Algom, in 1987.

The industry's prospects heightened in 1987 with the announcement of the Canada-U.S. Free Trade Agreement, in which the threat of import restrictions on Canadian uranium would be eliminated. Another development which improved the prospects of the industry was the signing of Canada's new ownership policy on foreign investment on December 23, 1987. This policy, which requires at least 51% Canadian ownership of a uranium property once production commences, was designed to encourage and promote economic development, increase employment and encouage investment in Canada's uranium mining industry.

The demand for uranium is linked to the development of nuclear energy. With Energy, Mines and Resources prediction for world nuclear capacity to increase to 340 000 MW by the year 2000 from 224 000 MW in 1986, world uranium demand is expected to increase by 23 000 tonnes/year, over the current level, to 55 000 tonnes/year by the turn of the century. In terms of meeting Canada's requirements, the scheduled completion of Ontario's Darlington reactor in 1992, is expected to increase demand to 2 100 tonnes/year in 2000 from 1 600 tonnes in 1987.

Elliot Lake contracts are suitable to supply Ontario Hydro's requirements into the next century. However, Saskatchewan, with its lower cost, high grade mines will continue to account for a larger share of Canada's total uranium production.

In the accompanying table, production consists of the uranium content of precipitates shipped with values as reported by the producers.

[1] Production figures include yttrium

ZINC

Ontario remained Canada's largest producer of zinc in 1987, accounting for 25% of national zinc output. The provincial production of zinc decreased by 2% from 1986. Canada is the world's largest producer and exporter of zinc producing about 20% of the world's total zinc production.

Historically, Ontario's zinc production increased significantly after the discovery of orebodies at Manitouwadge in Northwestern Ontario in 1956. Zinc production increased greatly again in 1967 as the result of the discovery of the Texasgulf deposit in the Timmins area. Today, production from that mine (now Falconbridge's Kidd Creek Mine) accounts for over 55 per cent of Ontario's zinc output. Ontario's newest zinc mine, Minnova's Winston Lake deposit went into production in mid–1988 and is anticipated to produce some 50 million kilograms of refined zinc annually.

The average price for zinc increased from $1.22 per kilogram in 1986 to $1.65 in 1988. Zinc is the world's fourth most important metal after steel, copper and aluminum. It is principally used in galvanized products (over 40 per cent), especially in the automotive and construction industries. Other uses include brass and bronze in plumbing fittings, diecastings and rolled zinc for construction.

Over $788 million of Canada's zinc output was exported in 1987 mainly to the United States, the E.E.C. and Japan. In 1986, 126 million kilograms of zinc were consumed in Canada representing 13% of Canadian zinc production.

In the table, production includes:
(a) refined zinc from Falconbridge Ltd. Kidd Creek Division, Timmins, Ontario
(b) recoverable zinc (metal paid for) in concentrates shipped to the following domestic smelters: Electrolytic Zinc Ltd., Valleyfield, Quebec; Cominco Ltd., Trail, B.C. and Hudson Bay Mining and Smelting, Flin Flon, Manitoba.

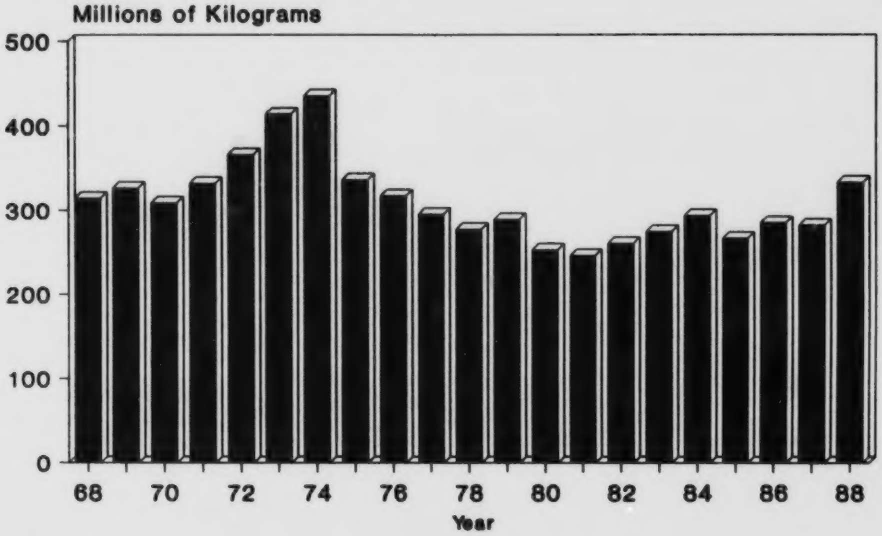
Value is based on settlement value as reported or when settlement value is not available it is based on the average yearly industry price times volume.

VOLUME AND VALUE OF PRODUCTION OF ZINC IN ONTARIO

	VOLUME OF PRODUCTION IN 000'S		VALUE OF PRODUCTION IN 000'S			UNIT VALUE
YEAR	POUNDS	KG	CURRENT DOLLARS	1971 DOLLARS	1988 DOLLARS	1988 DOLLARS/KG
1968	693 515	314 573	97 786	110 243	394 450	1.25
1969	720 572	326 846	109 743	118 385	423 582	1.30
1970	680 484	308 662	108 401	111 985	400 681	1.30
1971	731 451	331 780	122 372	122 372	437 846	1.32
1972	807 220	366 149	153 945	146 754	525 086	1.43
1973	912 729	414 007	220 388	193 833	693 533	1.68
1974	960 117	435 502	335 081	258 950	926 522	2.13
1975	740 428	335 852	277 660	189 529	678 136	2.02
1976	699 293	317 194	263 102	164 029	586 894	1.85
1977	651 289	295 420	231 409	134 775	482 226	1.63
1978	611 697	277 461	212 608	116 370	416 371	1.50
1979	637 924	289 357	278 881	138 954	497 178	1.72
1980	558 495	253 329	242 807	109 029	390 104	1.54
1981	542 405	246 031	286 284	116 234	415 884	1.69
1982	574 400	260 544	257 888	94 051	336 515	1.29
1983	605 871	274 819	280 506	96 560	345 490	1.26
1984	648 447	294 131	395 602	131 342	469 942	1.60
1985	588 498	266 938	301 001	96 013	343 534	1.29
1986	629 314	285 452	346 824	105 354	376 955	1.32
1987 (R)	622 578	282 397	341 822	99 831	357 196	1.26
1988 (P)	734 657	333 235	548 838	153 392	548 838	1.65
TOTAL	14 351 384	6 509 679		2 807 985	10 046 963	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME OF PRODUCTION OF ZINC
IN ONTARIO



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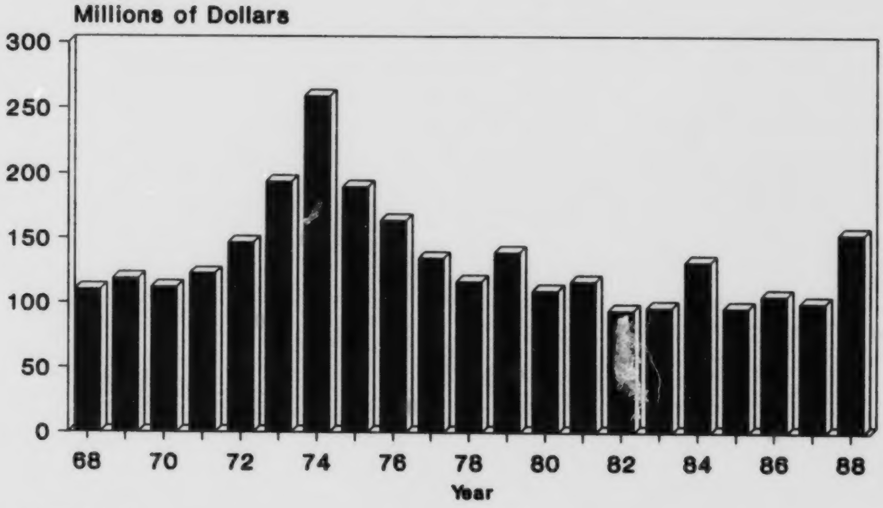
VALUE OF PRODUCTION OF ZINC IN ONTARIO
(IN 1971 CONSTANT $)



'88 - Preliminary
Source: Information & Statistics Section
MNDM

VOLUME AND VALUE OF MINERAL PRODUCTION IN ONTARIO, IN CANADA, AND THE WORLD

VOLUME AND VALUE OF MINERAL PRODUCTION IN 1988 IN ONTARIO, CANADA AND THE WORLD

MINERAL COMMODITY	UNIT OF VOLUME	ONTARIO		CANADA		WORLD VOLUME IN 000'S	ONTARIO VOLUME AS % OF WORLD VOLUME	CANADA VOLUME AS % OF WORLD VOLUME
		VOLUME IN 000'S	$ VALUE IN 000'S	VOLUME IN 000'S	$ VALUE IN 000'S			
ANTIMONY	KG	8	22	2 977	8 411	N/A	N/A	N/A
ASBESTOS	TONNE	0	0	705	268 357	N/A	N/A	N/A
BARITE	TONNE	X	1 475	54	4 336	N/A	N/A	N/A
BISMUTH	KG	X	130	195	3 016	N/A	N/A	N/A
CADMIUM	KG	797	15 009	1 742	32 813	N/A	N/A	N/A
CEMENT	TONNE	5 441	449 025	12 611	1 012 625	N/A	N/A	N/A
CLAY PRODUCTS	N/A	N/A	122 203	N/A	185 273	N/A	N/A	N/A
COAL	TONNE	0	0	69 500	1 907 800	N/A	N/A	N/A
COBALT	KG	2 237	42 494	2 764	52 502	N/A	N/A	N/A
COPPER	KG	256 629	824 034	721 588	2 317 018	N/A	N/A	N/A
GEMSTONES	KG	X	137	440	2 098	N/A	N/A	N/A
GOLD	G	57 882	1 002 920	127 843	2 215 128	N/A	N/A	N/A
GYPSUM	TONNE	1 459	19 712	8 522	87 674	N/A	N/A	N/A
IRON ORE	TONNE	2 927	X	38 742	1 388 129	N/A	N/A	N/A
LEAD	KG	2 268	2 268	333 707	333 707	N/A	N/A	N/A
LIME	TONNE	1 660	114 374	2 535	189 946	N/A	N/A	N/A
MOLYBDENUM	KG	0	0	12 388	107 737	N/A	N/A	N/A
NATURAL GAS	K CU M	497	63 633	87 893	4 973 307	N/A	N/A	N/A
NATURAL GAS BY-PROD.	CU M	0	0	22 332	1 609 518	N/A	N/A	N/A
NEPHELINE SYENITE	TONNE	542	23 411	542	23 411	N/A	N/A	N/A
NICKEL	KG	142 292	2 166 259	213 871	3 255 973	N/A	N/A	N/A
PEAT	TONNE	X	X	708	70 562	N/A	N/A	N/A
PETROLEUM	CU M	190	21 485	92 856	9 349 519	N/A	N/A	N/A
PLATINUM GROUP	KG	X	X	11	171 917	N/A	N/A	N/A
POTASH	TONNE	0	0	8 070	1 058 716	N/A	N/A	N/A

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF MINERAL PRODUCTION IN 1988 IN ONTARIO, CANADA AND THE WORLD

MINERAL COMMODITY	UNIT OF VOLUME	ONTARIO VOLUME	ONTARIO $ VALUE	CANADA VOLUME	CANADA $ VALUE	WORLD VOLUME IN 000'S	ONTARIO VOLUME AS % OF WORLD VOLUME	CANADA VOLUME AS % OF WORLD VOLUME
		IN 000'S		IN 000'S				
QUARTZ	TONNE	298	8 430	2 710	46 997	N/A	N/A	N/A
SALT	TONNE	6 863	158 440	10 975	257 518	N/A	N/A	N/A
SAND & GRAVEL	TONNE	99 650	288 985	276 064	782 675	N/A	N/A	N/A
SELENIUM	KG	252	6 954	468	12 905	N/A	N/A	N/A
SILVER	KG	386	95 583	1 527	378 136	N/A	N/A	N/A
SOAPSTONE, TALC	TONNE	X	11 870	150	17 294	N/A	N/A	N/A
SODIUM SULPHATE	TONNE	0	0	310	23 020	N/A	N/A	N/A
STONE	TONNE	58 900	298 000	120 322	618 812	N/A	N/A	N/A
SULPHUR	TONNE	541	44 147	6 734	534 415	N/A	N/A	N/A
TELLURIUM	KG	13	488	23	876	N/A	N/A	N/A
URANIUM(U)	KG	4 543	523 430	13 233	1 107 956	N/A	N/A	N/A
ZINC	KG	333 235	548 838	1 253 580	2 064 647	N/A	N/A	N/A
TOTAL VALUE OF ALL MINERAL COMMODITIES IN 1988			6 853 756		36 417 628 *			

* THIS TOTAL IS UNDERESTIMATED SINCE N/A MAY BE CONSIDERED AS "0".

NOTE: THE 1988 DATA ARE PRELIMINARY ESTIMATES AND CAN VARY WIDELY (+/- 25 % OR MORE) FROM THE FINAL CENSUS DATA WHICH WILL BE COLLECTED DURING 1989.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF MINERAL PRODUCTION IN 1987 IN ONTARIO, CANADA AND THE WORLD

		ONTARIO		CANADA		WORLD	ONTARIO VOLUME AS % OF WORLD VOLUME	CANADA VOLUME AS % OF WORLD VOLUME
MINERAL COMMODITY	UNIT OF VOLUME	VOLUME	$ VALUE	VOLUME	$ VALUE	VOLUME IN 000'S		
		IN 000'S		IN 000'S				
ANTIMONY	KG	N/A	N/A	3 706	9 698	57 334	.00	6.46
ASBESTOS	TONNE	0	0	665	237 989	4 502	.00	14.77
BARITE	TONNE	7	1 400	42	4 115	4 264	.16	.99
BISMUTH	KG	N/A	N/A	157	1 662	4 264	.00	3.68
CADMIUM	KG	760	3 827	1 444	7 804	18 400	4.13	7.85
CALCIUM	KG	498	5 601	498	5 601	N/A	N/A	N/A
CEMENT	TONNE	5 432	419 713	12 522	979 132	1 007 429	.54	1.24
CLAY PRODUCTS	N/A	N/A	120 209	N/A	199 398	N/A	N/A	N/A
COAL	TONNE	0	0	61 211	1 641 300	N/A	N/A	N/A
COBALT	KG	2 039	38 156	2 490	46 654	31 661	6.44	7.86
COLUMBIUM(CB205)	KG	0	0	X	X	14 969	.00	.00
COPPER	KG	282 915	677 317	789 711	1 904 553	8 340 000	3.39	9.47
GEMSTONES	KG	166	249	355	1 622	N/A	N/A	N/A
GOLD	G	53 081	1 016 104	115 981	2 213 351	1 679 588	3.16	6.91
GYPSUM	TONNE	1 468	16 547	9 094	86 985	88 178	1.67	10.31
IRON ORE	TONNE	3 236	150 728	37 708	1 395 586	884 977	.37	4.26
LEAD	KG	5 863	6 459	372 987	394 832	3 360 000	.17	11.10
LIME	TONNE	1 601	108 486	2 393	175 510	111 584	1.43	2.14
MAGNESIUM	KG	9 373	41 924	9 373	41 924	N/A	N/A	N/A
MOLYBDENUM	KG	0	0	14 771	126 315	81 193	.00	18.19
NATURAL GAS	K CU M	511	67 209	78 270	4 620 326	N/A	N/A	N/A
NATURAL GAS BY-PROD.	CU M	0	0	21 560	1 876 299	N/A	N/A	N/A
NEPHELINE SYENITE	TONNE	506	20 664	506	20 664	N/A	N/A	N/A
NICKEL	KG	130 171	869 315	189 086	1 273 042	792 879	16.42	23.85
PEAT	TONNE	2	326	648	73 996	246 754	.00	.26

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF MINERAL PRODUCTION IN 1987 IN ONTARIO, CANADA AND THE WORLD

MINERAL COMMODITY	UNIT OF VOLUME	ONTARIO VOLUME IN 000'S	ONTARIO $ VALUE IN 000'S	CANADA VOLUME IN 000'S	CANADA $ VALUE IN 000'S	WORLD VOLUME IN 000'S	ONTARIO VOLUME AS % OF WORLD VOLUME	CANADA VOLUME AS % OF WORLD VOLUME
PETROLEUM	CU M	136	20 720	88 775	12 142 518	N/A	N/A	N/A
PLATINUM GROUP	KG	10	167 984	11	X	249	3.94	4.42
POTASH	TONNE	0	0	7 668	745 009	28 660	.00	26.76
QUARTZ	TONNE	342	10 180	1 990	43 030	N/A	N/A	N/A
SALT	TONNE	5 690	139 326	10 129	238 626	174 179	3.27	5.82
SAND & GRAVEL	TONNE	96 122	294 689	278 547	768 755	N/A	N/A	N/A
SELENIUM	KG	222	4 195	430	8 152	1 170	18.93	36.75
SILVER	KG	438	135 102	1 372	423 207	13 312	3.29	10.31
SOAPSTONE, TALC	TONNE	58	9 632	136	14 307	N/A	N/A	N/A
SODIUM SULPHATE	TONNE	0	0	342	26 545	2 032	.00	16.83
STONE	TONNE	61 704	272 081	120 804	590 629	N/A	N/A	N/A
SULPHUR	TONNE	476	44 779	6 532	603 045	54 500	.87	11.99
TELLURIUM	KG	1	31	13	412	95	1.05	13.68
TIN	KG	0	0	X	X	163 000	.00	.00
TUNGSTEN(WO3)	KG	0	0	0	0	41 400	.00	.00
URANIUM(U)	KG	4 901	581 294	13 612	1 182 209	N/A	N/A	N/A
ZINC	KG	282 397	341 822	1 146 024	1 442 082	7 056 000	4.00	16.24
TOTAL VALUE OF ALL MINERAL COMMODITIES IN 1987			5 586 069		35 748 733 *			

* THIS TOTAL IS UNDERESTIMATED SINCE N/A MAY BE CONSIDERED AS "0".

NOTE: VALUE OF LIME AND VALUE OF CEMENT PRODUCED IN ONTARIO EXCLUDE THE VALUE OF STONE USED TO PRODUCE THE LIME AND CEMENT. IN 1987 $10,413,130 WAS DEDUCTED FROM CEMENT AND $6,547,572 WAS DEDUCTED FROM LIME. THIS REPORT EXCLUDES YTTRIUM, FELDSPAR, SERPENTINE FILLER & TERRAZZO CHIPS.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF MINERAL PRODUCTION IN 1986 IN ONTARIO, CANADA AND THE WORLD

		ONTARIO		CANADA			ONTARIO VOLUME AS % OF WORLD VOLUME	CANADA VOLUME AS % OF WORLD VOLUME
MINERAL COMMODITY	UNIT OF VOLUME	VOLUME IN 000'S	$ VALUE	VOLUME IN 000'S	$ VALUE	WORLD VOLUME IN 000'S		
ANTIMONY	KG	N/A	N/A	3 805	12 332	59 892	.00	6.35
ASBESTOS	TONNE	0	0	662	234 053	4 522	.00	14.64
BARITE	TONNE	10	2 000	40	4 215	4 902	.20	.82
BISMUTH	KG	N/A	N/A	153	1 413	4 066	.00	3.76
CADMIUM	KG	760	2 904	1 436	5 490	18 257	4.16	7.87
CALCIUM	KG	312	3 743	312	3 743	N/A	N/A	N/A
CEMENT	TONNE	4 843	329 021	11 001	810 279	997 807	.49	1.10
CLAY PRODUCTS	N/A	N/A	108 067	N/A	177 584	N/A	N/A	N/A
COAL	TONNE	0	0	57 811	1 725 888	N/A	N/A	N/A
COBALT	KG	2 012	40 323	2 297	46 623	27 508	7.31	8.35
COLUMBIUM(CB2O5)	KG	0	0	X	X	15 035	.00	.00
COPPER	KG	264 413	534 006	698 070	1 419 533	8 156 200	3.24	8.56
GEMSTONES	KG	137	198	354	1 287	N/A	N/A	N/A
GOLD	G	46 141	755 187	102 761	1 684 724	1 584 319	2.91	6.49
GYPSUM	TONNE	1 321	16 974	8 803	83 072	87 594	1.51	10.05
IRON ORE	TONNE	3 459	176 488	36 165	1 342 666	861 379	.40	4.20
LEAD	KG	6 065	4 130	334 119	227 502	3 239 300	.19	10.31
LIME	TONNE	1 591	96 341	2 323	156 131	110 523	1.44	2.10
MAGNESIUM	KG	8 748	41 001	8 748	41 001	N/A	N/A	N/A
MOLYBDENUM	KG	0	0	11 251	90 111	93 527	.00	12.03
NATURAL GAS	K CU M	529	68 269	71 921	5 626 309	N/A	N/A	N/A
NATURAL GAS BY-PROD.	CU M	0	0	19 127	1 802 454	N/A	N/A	N/A
NEPHELINE SYENITE	TONNE	467	19 848	467	19 848	N/A	N/A	N/A
NICKEL	KG	121 851	731 440	163 639	979 100	783 911	15.54	20.87
PEAT	TONNE	5	785	738	80 152	246 608	.00	30

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

VOLUME AND VALUE OF MINERAL PRODUCTION IN 1986 IN ONTARIO, CANADA AND THE WORLD

MINERAL COMMODITY	UNIT OF VOLUME	ONTARIO VOLUME IN 000'S	ONTARIO $ VALUE IN 000'S	CANADA VOLUME IN 000'S	CANADA $ VALUE IN 000'S	WORLD VOLUME IN 000'S	ONTARIO VOLUME AS % OF WORLD VOLUME	CANADA VOLUME AS % OF WORLD VOLUME
PETROLEUM	CU M	136	17 343	85 468	9 611 884	N/A	N/A	N/A
PLATINUM GROUP	KG	11	180 232	12	X	244	4.48	4.92
POTASH	TONNE	0	0	6 752	584 304	28 248	.00	23.90
QUARTZ	TONNE	304	9 230	1 914	40 154	N/A	N/A	N/A
SALT	TONNE	6 240	147 686	10 332	239 629	174 381	3.58	5.92
SAND & GRAVEL	TONNE	85 512	248 185	257 971	678 564	N/A	N/A	N/A
SELENIUM	KG	164	2 391	339	5 386	1 074	15.24	31.56
SILVER	KG	362	91 203	1 102	278 343	13 057	2.77	8.44
SOAPSTONE, TALC	TONNE	55	10 524	123	15 062	N/A	N/A	N/A
SODIUM SULPHATE	TONNE	0	0	371	33 012	2 115	.00	17.54
STONE	TONNE	53 270	242 885	105 563	505 923	N/A	N/A	N/A
SULPHUR	TONNE	461	30 862	7 722	929 820	54 161	.85	14.26
TANTALUM(TA2O5)	KG	0	0	39	3 470	N/A	N/A	N/A
TELLURIUM	KG	10	355	20	706	86	11.99	23.26
TIN	KG	0	0	X	X	180 237	.00	.00
TUNGSTEN(WO3)	KG	0	0	2 470	X	42 474	.00	5.82
URANIUM(U)	KG	4 752	566 134	11 502	1 042 334	N/A	N/A	N/A
ZINC	KG	285 452	346 824	1 008 377	1 225 178	6 853 000	4.17	14.71
TOTAL VALUE OF ALL MINERAL COMMODITIES IN 1986			@ 4 824 579		31 769 279 *			

* THIS TOTAL IS UNDERESTIMATED SINCE N/A MAY BE CONSIDERED AS "0".

@ DOES NOT INCLUDE VALUE OF YTTRIUM AND STRONTIUM WHICH WAS PRODUCED IN ONTARIO IN 1986 & OTHER NON-METALS.

NOTE: VALUE OF LIME AND VALUE OF CEMENT PRODUCED IN ONTARIO EXCLUDE THE VALUE OF STONE USED TO PRODUCE THE LIME AND CEMENT. IN 1986 $8,202,151 WAS DEDUCTED FROM CEMENT AND $8,138,523 WAS DEDUCTED FROM LIME. THIS REPORT EXCLUDES FELDSPAR, SERPENTINE FILLER & TERRAZZO CHIPS.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRELIMINARY ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1988

IN 000'S

		NFLD	P.E.I.	N.S.	N.B.	QUE.	ONT.
FUELS							
COAL	TONNE	0	0	3 425	545	0	0
	$	0	0	207 820	33 880	0	0
NATURAL GAS	K CU M	0	0	0	1	0	497
	$	0	0	0	14	0	63 633
NATURAL GAS BY-PROD.	CU M	0	0	0	0	0	0
	$	0	0	0	0	0	0
PETROLEUM, CRUDE	CU M	0	0	0	0	0	190
	$	0	0	0	13	0	21 485
TOTAL	$	0	0	207 820	33 907	0	85 118
METALLIC MINERAL							
ANTIMONY	KG	0	0	0	2 576	0	8
	$	0	0	0	7 276	0	22
BISMUTH	KG	0	0	0	180	0	8
	$	0	0	0	2 770	0	130
CADMIUM	KG	C	0	0	84	210	797
	$	0	0	0	1 590	3 954	15 009
CALCIUM	KG	0	0	0	0	0	X
	$	0	0	0	0	0	X
COBALT	KG	0	0	0	0	0	2 237
	$	0	0	0	0	0	42 494
COPPER	KG	0	0	X	9 607	45 191	256 629
	$	0	0	X	30 847	145 108	824 034
GOLD	G	X	0	X	74	32 485	57 882
	$	X	0	X	1 274	562 868	1 002 920
IRON ORE	TONNE	20 044	0	0	0	15 700	2 927
	$	726 574	0	0	0	X	X
LEAD	KG	0	0	0	73 289	0	2 268
	$	0	0	0	73 289	0	2 268

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRELIMINARY ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1988

MAN.	SASK.	ALTA	B. C.	YUKON	N. W. T.	CANADA	
				IN 000'S			
							FUELS
0	12 025	29 270	24 235	0	0	69 500	COAL
0	110 100	456 000	1 100 000	0	0	1 907 800	
0	2 868	76 308	8 081	0	138	87 893	NATURAL GAS
0	163 849	4 415 169	324 359	0	6 283	4 973 307	
6	242	21 489	581	0	14	22 332	NATURAL GAS BY-PROD.
473	15 958	1 559 096	32 740	0	1 251	1 609 518	
771	11 949	76 276	1 889	0	1 781	92 856	PETROLEUM, CRUDE
83 125	1 131 561	7 724 165	226 573	0	162 597	9 349 519	
83 598	1 421 468	14 154 430	1 683 672	0	170 131	17 840 144	TOTAL
							METALLIC MINERAL
0	0	0	346	5	44	2 979	ANTIMONY
0	0	0	976	14	123	8 411	
0	0	0	7	X	0	195	BISMUTH
0	0	0	114	2	0	3 016	
86	3	0	319	24	219	1 742	CADMIUM
1 626	51	0	6 001	458	4 124	32 813	
0	0	0	0	0	0	X	CALCIUM
0	0	0	0	0	0	X	
527	0	0	0	0	0	2 764	COBALT
10 008	0	0	0	0	0	52 502	
53 304	2 509	0	353 406	X	X	721 588	COPPER
171 160	8 057	0	1 134 787	X	X	2 317 018	
4 285	2 083	20	13 036	4 304	11 422	127 843	GOLD
74 246	36 096	353	225 877	74 568	197 906	2 215 128	
0	0	0	71	0	0	38 742	IRON ORE
0	0	0	3 170	0	0	1 388 129	
X	0	0	90 086	X	67 227	333 707	LEAD
X	0	0	90 086	X	67 227	333 707	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRELIMINARY ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1988

IN 000'S

		NFLD	P.E.I	N.S.	N.B.	QUE.	ONT.
METALLIC MINERAL							
MAGNESIUM	KG	0	0	0	0	0	X
	$	0	0	0	0	0	X
MOLYBDENUM	KG	0	0	0	0	0	0
	$	0	0	0	0	0	0
NICKEL	KG	0	0	0	0	0	142 292
	$	0	0	0	0	0	2 166 259
PLATINUM GROUP	KG	0	0	0	0	0	X
	$	0	0	0	0	0	X
SELENIUM	KG	0	0	0	0	169	252
	$	0	0	0	0	4 642	6 954
SILVER	KG	X	0	X	202	122	386
	$	X	0	X	49 896	30 250	95 583
TANTALUM(TA2O5)	KG	0	0	0	0	0	0
	$	0	0	0	0	0	0
TELLURIUM	KG	0	0	0	0	6	13
	$	0	0	0	0	247	488
URANIUM(U)	KG	0	0	0	0	0	4 543
	$	0	0	0	0	0	523 430
YTTRIUM	KG	0	0	0	0	0	X
	$	0	0	0	0	0	X
ZINC	KG	29 906	0	X	230 125	73 440	333 235
	$	49 256	0	X	379 016	120 956	548 838
TOTAL	$	811 396	0	39 848	545 958	1 661 025	5 543 442
NON-METALLIC MINERAL							
ARSENIOUS TRIOXIDE	TONNE	0	0	0	0	0	0
	$	0	0	0	0	0	0
ASBESTOS	TONNE	72	0	0	0	533	0
	$	27 072	0	0	0	190 285	0

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRELIMINARY ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1988

IN 000'S

MAN.	SASK.	ALTA	B.C.	YUKON	N.W.T.	CANADA	
							METALLIC MINERAL
0	0	0	0	0	0	X	MAGNESIUM
0	0	0	0	0	0	X	
0	0	0	12 388	0	0	12 388	MOLYBDENUM
0	0	0	107 737	0	0	107 737	
71 579	0	0	0	0	0	213 871	NICKEL
1 089 714	0	0	0	0	0	3 255 973	
X	0	0	0	0	0	11	PLATINUM GROUP
X	0	0	0	0	0	171 917	
42	5	0	0	0	0	468	SELENIUM
1 168	141	0	0	0	0	12 905	
28	X	X	420	340	27	1 527	SILVER
6 933	X	1	104 003	84 192	6 785	378 136	
13	0	0	0	0	0	13	TANTALUM(TA2O5)
1 308	0	0	0	0	0	1 308	
3	X	0	0	0	0	23	TELLURIUM
126	15	0	0	0	0	876	
0	8 690	0	0	0	0	13 233	URANIUM(U)
0	584 526	0	0	0	0	1 107 956	
0	0	0	0	0	0	X	YTTRIUM
0	0	0	0	0	0	X	
57 182	X	0	119 522	118 325	290 000	1 253 580	ZINC
94 179	X	0	196 853	194 881	477 630	2 064 647	
1 472 018	631 921	354	1 875 580	454 630	753 866	13 790 038	TOTAL
							NON-METALLIC MINERAL
0	0	0	0	0	X	X	ARSENIOUS TRIOXIDE
0	0	0	0	0	2 168	2 168	
0	0	0	100	0	0	705	ASBESTOS
0	0	0	51 000	0	0	268 357	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRELIMINARY ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1988

IN 000'S

		NFLD	P.E.I.	N.S.	N.B.	QUE.	ONT.
NON-METALLIC MINERAL							
BARITE	TONNE	0	0	X	0	0	X
	$	0	0	1 250	0	0	1 475
GEMSTONES	KG	X	0	0	0	0	X
	$	400	0	0	0	0	137
GYPSUM	TONNE	X	0	6 331	X	0	1 459
	$	1 075	0	58 243	19	0	19 712
LIZARDITE FILLER	TONNE	0	0	0	0	0	X
	$	0	0	0	0	0	X
NEPHELINE SYENITE	TONNE	0	0	0	0	0	542
	$	0	0	0	0	0	23 411
PEAT	TONNE	2	0	X	214	291	X
	$	102	0	X	18 292	22 371	X
POTASH(K2O)	TONNE	0	0	0	X	0	0
	$	0	0	0	X	0	0
QUARTZ	TONNE	X	0	X	X	895	298
	$	X	0	X	X	19 212	8 430
SALT	TONNE	0	0	X	X	X	6 863
	$	0	0	X	X	X	158 440
SOAPSTONE, TALC	TONNE	X	0	0	0	41	X
	$	1 700	0	0	0	3 722	11 870
SODIUM SULPHATE	TONNE	0	0	0	0	0	0
	$	0	0	0	0	0	0
SULPHUR (ELEMENTAL)	TONNE	0	0	0	0	0	0
	$	0	0	0	0	0	0
SULPHUR SMELTER GAS	TONNE	0	0	1	94	23	541
	$	0	0	80	10 616	3 130	44 147
TREMOLITE	TONNE	0	0	0	0	0	X
	$	0	0	0	0	0	X
TOTAL	$	39 049	0	91 433	205 124	515 756	270 736

NOTE: DOES NOT INCLUDE OTHER NON-METALS

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRELIMINARY ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1988

IN 000'S

MAN.	SASK.	ALTA	B. C.	YUKON	N. W. T.	CANADA	NON-METALLIC MINERAL
0	0	0	X	0	0	54	BARITE
0	0	0	1 611	0	0	4 336	
0	0	0	X	0	0	440	GEMSTONES
0	0	0	1 561	0	0	2 098	
227	0	0	428	0	0	8 522	GYPSUM
3 655	0	0	4 970	0	0	87 674	
0	400	1 218	0	0	0	10 975	LIZARDITE FILLER
0	24 458	17 504	0	0	0	257 518	
0	0	0	0	0	0	542	NEPHELINE SYENITE
0	0	0	0	0	0	23 411	
X	X	86	0	0	0	708	PEAT
X	X	15 554	0	0	0	70 562	
0	X	0	0	0	0	8 070	POTASH(K2O)
0	X	0	0	0	0	1 058 716	
X	169	X	X	0	0	2 710	QUARTZ
X	X	5 300	X	0	0	46 997	
0	400	1 218	0	0	0	8 481	SALT
0	24 458	17 504	0	0	0	200 402	
0	0	0	X	0	0	150	SOAPSTONE, TALC
0	0	0	2	0	0	17 294	
0	X	X	0	0	0	310	SODIUM SULPHATE
0	19 892	3 128	0	0	0	23 020	
0	15	5 573	326	0	0	5 914	SULPHUR (ELEMENTAL)
0	1 482	420 582	38 737	0	0	460 801	
2	0	0	143	10	6	820	SULPHUR SMELTER GAS
204	0	0	13 871	970	596	73 614	
0	0	0	0	0	0	X	TREMOLITE
0	0	0	0	0	0	X	
16 513	938 829	462 068	134 838	970	2 764	2 678 080	TOTAL

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRELIMINARY ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1988

IN 000'S

		NFLD	P.E.I.	N.S.	N.B.	QUE.	ONT.
STRUCTURAL MATERIAL							
CEMENT	TONNE	X	0	X	X	3 394	5 441
	$	10 791	0	58 232	4 058	194 850	449 025
CLAY PRODUCTS		N/A	N/A	N/A	N/A	N/A	N/A
	$	1 225	0	7 435	2 975	24 745	122 203
LIME	TONNE	0	0	0	X	X	1 660
	$	0	0	0	X	X	114 374
SAND AND GRAVEL	TONNE	3 440	700	9 600	10 300	33 089	99 650
	$	16 856	2 625	33 600	X	X	288 985
STONE	TONNE	990	0	4 450	2 960	43 007	58 900
	$	9 158	0	22 695	16 280	217 762	298 000
TOTAL	$	38 030	2 625	121 962	46 067	539 371	1 272 587
GRAND TOTAL	$	888 475	2 625	461 063	831 056	2 716 152	7 171 883

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRELIMINARY ESTIMATE OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1988

IN 000'S

MAN.	SASK.	ALTA	B. C.	YUKON	N. W. T.	CANADA	
							STRUCTURAL MATERIAL
X	X	1 153	1 512	0	0	12 611	CEMENT
46 217	16 774	126 545	106 133	0	0	1 012 625	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	CLAY PRODUCTS
2 278	5 530	9 382	9 500	0	0	185 273	
X	0	186	171	0	0	2 535	LIME
8 613	0	17 642	14 928	0	0	189 946	
13 300	10 500	42 500	49 300	1 550	2 135	276 064	SAND AND GRAVEL
37 240	30 975	133 875	133 110	7 130	7 900	782 675	
3 500	2	300	4 913	800	500	120 322	STONE
14 000	4	2 100	34 388	2 800	1 625	618 812	
108 348	53 283	289 544	298 059	9 930	9 525	2 789 331	TOTAL
1 680 477	3 045 501	14 906 396	3 992 149	465 530	936 286	37 097 593	GRAND TOTAL

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REVISED STATISTICS OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1987

		NFLD	P.E.I.	N.S.	N.B.	QUE.	ONT.
			IN 000'S				
FUELS							
COAL	TONNE	0	0	2 930	533	0	0
	$	0	0	178 620	33 320	0	0
NATURAL GAS	K CU M	0	0	0	1	0	511
	$	0	0	0	14	0	67 209
NATURAL GAS BY-PROD.	CU M	0	0	0	0	0	0
	$	0	0	0	0	0	0
PETROLEUM, CRUDE	CU M	0	0	4	X	0	136
	$	0	0	324	13	0	20 720
TOTAL	$	0	0	178 944	33 347	0	87 929
METALLIC MINERAL							
ANTIMONY	KG	0	0	0	3 248	0	N/A
	$	0	0	0	8 220	0	N/A
BISMUTH	KG	0	0	0	134	0	N/A
	$	0	0	0	1 418	0	N/A
CADMIUM	KG	0	0	0	84	214	760
	$	0	0	0	489	1 245	3 827
CALCIUM	KG	0	0	0	0	0	498
	$	0	0	0	0	0	5 601
COBALT	KG	0	0	0	0	0	2 039
	$	0	0	0	0	0	38 156
COPPER	KG	0	0	X	7 233	66 848	282 915
	$	0	0	X	17 515	161 877	677 317
GOLD	G	X	0	X	420	29 543	53 081
	$	7 092	0	2 640	7 986	562 327	1 016 104
IRON ORE	TONNE	18 423	0	0	0	15 988	3 236
	$	660 526	0	0	0	X	150 728
LEAD	KG	0	0	X	66 485	0	5 863
	$	0	0	X	70 333	0	6 459

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REVISED STATISTICS OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1987

IN 000'S

MAN.	SASK.	ALTA	B.C.	YUKON	N.W.T.	CANADA	
							FUELS
0	10 020	25 738	21 990	0	0	61 211	COAL
0	91 850	389 650	947 860	0	0	1 641 300	
0	2 428	67 029	8 135	0	166	78 270	NATURAL GAS
0	156 750	4 021 746	366 062	0	8 545	4 620 326	
4	214	20 752	560	0	30	21 560	NATURAL GAS BY-PROD.
344	18 080	1 808 971	46 161	0	2 743	1 876 299	
782	12 078	72 460	2 110	0	1 570	88 775	PETROLEUM, CRUDE
109 142	1 511 466	10 050 323	306 009	0	144 521	12 142 518	
109 486	1 778 146	16 270 690	1 666 092	0	155 809	20 280 443	TOTAL
							METALLIC MINERAL
X	0	0	374	40	44	3 706	ANTIMONY
X	0	0	1 209	129	141	9 698	
X	0	0	23	X	X	157	BISMUTH
X	0	0	242	2	X	1 662	
95	2	0	201	2	86	1 444	CADMIUM
551	11	0	1 167	13	501	7 804	
0	0	0	0	0	0	498	CALCIUM
0	0	0	0	0	0	5 601	
451	0	0	0	0	0	2 490	COBALT
8 498	0	0	0	0	0	46 654	
66 121	2 335	0	364 134	X	2	789 711	COPPER
160 115	5 654	0	881 772	X	4	1 904 553	
3 697	1 048	43	11 224	4 674	11 740	115 981	GOLD
70 364	19 956	824	213 632	88 970	223 456	2 213 351	
0	0	0	61	0	0	37 708	IRON ORE
0	0	0	2 221	0	0	1 395 586	
X	0	0	57 078	X	131 744	372 987	LEAD
X	0	0	60 382	X	139 370	394 832	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REVISED STATISTICS OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1987

IN 000'S

		NFLD	P. E. I.	N. S.	N. B.	QUE.	ONT.
METALLIC MINERAL							
MAGNESIUM	KG	0	0	0	0	0	9 373
	$	0	0	0	0	0	41 924
MOLYBDENUM	KG	0	0	0	0	0	0
	$	0	0	0	0	0	0
NICKEL	KG	0	0	0	0	0	130 171
	$	0	0	0	0	0	869 315
PLATINUM GROUP	KG	0	0	0	0	0	10
	$	0	0	0	0	0	167 983
SELENIUM	KG	0	0	0	0	162	222
	$	0	0	0	0	3 071	4 195
SILVER	KG	0	0	X	182	163	438
	$	0	0	54	56 176	50 148	135 102
TANTALUM(TA2O5)	KG	0	0	0	0	0	0
	$	0	0	0	0	0	0
TELLURIUM	KG	0	0	0	0	9	1
	$	0	0	0	0	273	31
URANIUM(U)	KG	0	0	0	0	0	4 901
	$	0	0	0	0	0	581 294
YTTRIUM	KG	0	0	0	0	0	X
	$	0	0	0	0	0	X
ZINC	KG	7 643	0	0	180 298	91 139	282 397
	$	9 737	0	0	229 699	116 111	341 822
TOTAL	$	677 355	0	34 296	391 836	1 694 616	4 041 463
NON-METALLIC MINERAL							
ARSENIOUS TRIOXIDE	TONNE	0	0	0	0	0	X
	$	0	0	0	0	0	X
ASBESTOS	TONNE	62	0	0	0	505	0
	$	19 191	0	0	0	171 860	0

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REVISED STATISTICS OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1987

IN 000'S

MAN.	SASK.	ALTA	B. C.	YUKON	N. W. T.	CANADA	
							METALLIC MINERAL
0	0	0	0	0	0	9 373	MAGNESIUM
0	0	0	0	0	0	41 924	
0	0	0	14 771	0	0	14 771	MOLYBDENUM
0	0	0	126 315	0	0	126 315	
58 915	0	0	0	0	0	189 086	NICKEL
403 727	0	0	0	0	0	1 273 042	
X	0	0	0	0	0	11	PLATINUM GROUP
X	0	0	0	0	0	181 849	
43	3	0	0	0	0	430	SELENIUM
822	64	0	0	0	0	8 152	
41	2	X	401	133	13	1 372	SILVER
12 643	543	1	123 569	40 965	4 006	423 207	
36	0	0	0	0	0	36	TANTALUM(TA205)
2 364	0	0	0	0	0	2 364	
3	X	0	0	0	0	13	TELLURIUM
100	8	0	0	0	0	412	
0	8 711	0	0	0	0	13 612	URANIUM(U)
0	600 915	0	0	0	0	1 182 209	
0	0	0	0	0	0	X	YTTRIUM
0	0	0	0	0	0	X	
63 551	1 764	0	114 117	147 045	258 070	1 146 024	ZINC
80 964	2 247	0	145 385	187 336	328 781	1 442 082	
759 341	629 398	825	1 557 322	434 862	696 259	10 917 573	TOTAL
							NON-METALLIC MINERAL
0	0	0	0	0	X	X	ARSENIOUS TRIOXIDE
0	0	0	0	0	666	X	
0	0	0	98	0	0	665	ASBESTOS
0	0	0	46 938	0	0	237 989	

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REVISED STATISTICS OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1987

IN 000'S

NON-METALLIC MINERAL		NFLD	P.E.I.	N.S.	N.B.	QUE.	
BARITE	TONNE	0	0	X	0	0	X
	$	0	0	1 361	0	0	1 400
GEMSTONES	KG	X	0	0	0	0	166
	$	388	0	0	0	0	249
GYPSUM	TONNE	X	0	6 274	X	0	1 468
	$	5 338	0	53 479	32	0	16 547
LIZARDITE FILLER	TONNE	0	0	0	0	0	X
	$	0	0	0	0	0	836
NEPHELINE SYENITE	TONNE	0	0	0	0	0	506
	$	0	0	0	0	0	20 664
PEAT	TONNE	1	0	X	197	274	2
	$	45	0	X	18 917	25 731	325
POTASH(K2O)	TONNE	0	0	0	X	0	0
	$	0	0	0	X	0	0
QUARTZ	TONNE	X	0	X	X	842	342
	$	X	0	X	X	17 625	10 180
SALT	TONNE	0	0	X	X	X	5 690
	$	0	0	X	X	X	139 326
SOAPSTONE, TALC	TONNE	X	0	0	0	36	X
	$	1 655	0	0	0	3 020	9 632
SODIUM SULPHATE	TONNE	0	0	0	0	0	0
	$	0	0	0	0	0	0
SULPHUR (ELEMENTAL)	TONNE	0	0	0	0	0	X
	$	0	0	0	0	0	42
SULPHUR SMELTER GAS	TONNE	0	0	X	91	37	476
	$	0	0	26	13 975	7 291	44 737
TREMOLITE	TONNE	0	0	0	0	0	X
	$	0	0	0	0	0	40
TOTAL	$	29 623	0	91 850	152 481	506 095	243 978

NOTE: DOES NOT INCLUDE OTHER NON-METALS

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REVISED STATISTICS OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1987

IN 000'S

MAN.	SASK.	ALTA	B.C.	YUKON	N.W.T.	CANADA	NON-METALLIC MINERAL
0	0	0	X	0	0	42	BARITE
0	0	0	1 354	0	0	4 115	
0	0	0	X	0	0	355	GEMSTONES
0	0	0	985	0	0	1 622	
380	0	0	536	0	0	9 094	GYPSUM
6 060	0	0	5 529	0	0	86 985	
0	0	0	0	0	0	X	LIZARDITE FILLER
0	0	0	0	0	0	836	
0	0	0	0	0	0	506	NEPHELINE SYENITE
0	0	0	0	0	0	20 664	
X	X	78	0	0	0	648	PEAT
X	X	15 221	0	0	0	73 996	
0	X	0	0	0	0	7 668	POTASH(K2O)
0	X	0	0	0	0	745 009	
X	163	X	X	0	0	1 990	QUARTZ
X	X	4 069	1 987	0	0	43 030	
0	460	1 191	0	0	0	10 129	SALT
0	26 177	17 385	0	0	0	238 626	
0	0	0	0	0	0	136	SOAPSTONE, TALC
0	0	0	0	0	0	14 307	
0	X	X	0	0	0	342	SODIUM SULPHATE
0	23 514	3 031	0	0	0	26 545	
1	12	5 471	324	0	0	5 808	SULPHUR (ELEMENTAL)
194	1 470	479 370	41 831	0	0	522 907	
0	0	0	60	1	59	724	SULPHUR SMELTER GAS
0	0	0	7 041	156	6 912	80 138	
0	0	0	0	0	0	X	TREMOLITE
0	0	0	0	0	0	40	
18 165	686 296	519 076	122 737	156	7 578	2 378 035	TOTAL

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REVISED STATISTICS OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1987

		NFLD	P.E.I.	N.S.	N.B.	QUE.	ONT.
		IN 000'S					
STRUCTURAL MATERIAL							
CEMENT	TONNE	X	0	X	X	3 616	5 432
	$	9 722	0	46 464	3 451	229 987	419 713
CLAY PRODUCTS		N/A	N/A	N/A	N/A	N/A	N/A
	$	1 132	0	7 584	2 935	36 125	120 209
LIME	TONNE	0	0	0	X	X	1 601
	$	0	0	0	X	X	108 485
SAND AND GRAVEL	TONNE	3 319	673	8 334	11 056	36 460	96 122
	$	16 451	2 541	24 368	X	X	294 689
STONE	TONNE	931	0	4 437	2 878	42 731	61 704
	$	8 535	0	23 133	15 934	213 112	272 081
TOTAL	$	35 840	2 541	101 549	44 567	580 047	1 215 177
GRAND TOTAL	$	742 818	2 541	406 639	622 231	2 780 758	5 588 547

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REVISED STATISTICS OF THE MINERAL PRODUCTION OF CANADA, BY PROVINCE, 1987

IN 000'S

MAN.	SASK.	ALTA	B. C.	YUKON	N. W. T.	CANADA	
							STRUCTURAL MATERIAL
X	X	1 107	1 308	0	0	12 522	**CEMENT**
46 755	17 735	116 947	88 358	0	0	979 132	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	CLAY PRODUCTS
2 958	5 633	14 183	8 639	0	0	199 398	
X	0	213	120	0	0	2 393	LIME
8 118	0	19 194	9 954	0	0	175 510	
14 687	11 922	44 050	49 260	352	2 183	278 418	SAND AND GRAVEL
39 264	33 619	137 523	131 316	1 502	8 132	782 719	
3 760	2	249	5 213	206	472	122 583	STONE
15 959	4	1 532	29 544	679	1 486	581 999	
113 054	56 991	289 379	267 811	2 181	9 618	2 718 755	TOTAL
1 000 046	3 150 831	17 079 970	3 613 962	437 199	869 264	36 294 806	**GRAND TOTAL**

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRODUCTION OF SAND, GRAVEL AND STONE

PRODUCTION OF SAND AND GRAVEL

MINERAL COMMODITY SUBGROUP	YEAR	VOLUME IN 000'S TONNES	$ VALUE IN 000'S
SAND	1981	23 631	43 913
	1982	16 898	38 454
	1983	18 678	44 930
	1984	19 853	47 965
	1985	20 289	52 870
	1986	26 921	82 908
	1987	31 609	102 205
GRAVEL(NATURAL)	1981	21 345	26 934
	1982	17 412	24 446
	1983	15 757	20 039
	1984	17 742	27 651
	1985	20 581	31 571
	1986	28 174	51 698
	1987	31 119	60 527
CRUSHED GRAVEL	1981	25 230	63 588
	1982	19 258	53 653
	1983	19 167	55 262
	1984	19 851	60 509
	1985	23 632	73 905
	1986	30 416	113 579
	1987	33 394	131 957
TOTAL PRODUCTION OF THE SAND AND GRAVEL INDUSTRY	1981	70 206	134 435
	1982	53 568	116 553
	1983	53 602	120 231
	1984	57 446	136 125
	1985	64 502	158 346
	1986	85 512	248 185
	1987	96 122	294 689

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRODUCTION OF STONE

	YEAR	VOLUME IN 000'S TONNES	$ VALUE IN 000'S
GRANITE QUARRIES	1981	1 739	23 297
	1982	1 546	23 569
	1983	1 041	26 551
	1984	1 730	32 477
	1985	2 520	36 839
	1986	1 363	13 617
	1987	1 745	17 621
LIMESTONE QUARRIES	1981	35 568	102 638
	1982	26 737	86 047
	1983	31 962	110 265
	1984	38 808	139 362
	1985	42 281	164 430
	1986	50 651	215 900
	1987	58 607	247 631
MARBLE QUARRIES	1981	90	644
	1982	148	891
	1983	91	4 444
	1984	105	6 275
	1985	190	8 900
	1986	189	8 928
	1987	254	3 544
SANDSTONE QUARRIES	1981	4	234
	1982	5	259
	1983	5	280
	1984	6	375
	1985	5	296
	1986	58	598
	1987	189	1 595
SHALE QUARRIES	1981	144	92
	1982	25	19

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

PRODUCTION OF STONE

	YEAR	VOLUME IN 000'S TONNES	$ VALUE IN 000'S
SHALE QUARRIES	1983	732	1 939
	1984	738	969
	1985	857	1 192
	1986	1 009	3 787
	1987	909	1 635
SLATE QUARRIES	1981	N/A	N/A
	1982	N/A	N/A
	1983	N/A	N/A
	1984	0	21
	1985	0	10
	1986	0	55
	1987	0	55
TOTAL PRODUCTION OF * THE STONE INDUSTRY	1981	37 545	126 905
	1982	28 461	110 785
	1983	33 831	143 479
	1984	41 387	179 479
	1985	45 853	211 667
	1986	53 270	242 885
	1987	61 704	272 081

* THESE TOTALS COULD BE UNDERESTIMATED SINCE N/A MAY BE CONSIDERED AS "0".

NOTE: THE VOLUME OF STONE FROM LIMESTONE QUARRIES INCLUDES THE STONE USED IN THE PRODUCTION OF CEMENT + LIME.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REPORT OF ALL STONE PRODUCTION
IN THE PROVINCE OF ONTARIO
1987

TYPE OF STONE	SOLD * TONNES IN 000'S	SOLD * $ VALUE IN 000'S	CONSUMED * TONNES IN 000'S	CONSUMED * $ VALUE IN 000'S
DIMENSIONAL STONE				
BUILDING STONE, ROUGH	22	1 423	25	1 369
LINING OPEN HEARTH FURNACE	1	65	0	0
MONUMENTAL AND ORNAMENTAL STONE	6	928	1	112
OTHER(FLAGSTONE, ETC.)	24	2 381	0	0
TOTAL FOR DIMENSIONAL STONE	53	4 797	26	1 481
CHEMICAL PROCESS STONE				
CEMENT PLANTS, CANADIAN	312	1 043	7 350	10 413
FLUX IN IRON AND STEEL FURNACES	1 162	4 535	0	0
FLUX IN NON-FERROUS SMELTERS	0	0	1	430
GLASS FACTORIES	122	2 411	0	0
LIME PLANTS, CANADIAN	1 399	4 995	494	5 229
PAINT BASE	6	111	0	0
SODA ASH	0	0	606	1 296
TOTAL FOR CHEMICAL PROCESS STONE	3 001	13 095	8 451	17 368
PULVERISED STONE				
AGRICULTURAL PURPOSES AND FERTILIZER PLANTS	330	3 985	0	0
ASPHALT FILLER	64	216	0	0
BRICK	0	0	180	259
CALCITE PRODUCTS	123	7 474	0	0
CARPET BACKING	15	243	0	0
TOTAL FOR PULVERISED STONE	532	11 918	180	259

* REFERS TO STONE SOLD AND CONSUMED BY STONE PRODUCERS.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REPORT OF ALL STONE PRODUCTION
IN THE PROVINCE OF ONTARIO
1987

TYPE OF STONE	SOLD * TONNES IN 000'S	SOLD * $ VALUE IN 000'S	CONSUMED * TONNES IN 000'S	CONSUMED * $ VALUE IN 000'S
MISCELLANEOUS STONE				
ARMOUR STONE	76	660	0	0
CRUSHED STONE FOR ARTIFICIAL STONE	4	50	0	0
DRAINAGE STONE	8	37	0	0
GABION	49	246	0	0
MINE BACKFILL	0	0	432	1 767
FILL	97	457	0	0
POULTRY GRIT	11	373	0	0
ROCK WOOL	0	5	0	0
ROOFING GRANULES	353	7 182	0	0
RUBBLE AND RIPRAP	360	1 860	0	0
SCREENINGS	95	131	0	0
SHALE	26	20	669	1 329
STUCCO DASH	3	321	0	0
TOTAL FOR MISCELLANEOUS STONE	1 082	11 342	1 101	3 096
CRUSHED STONE				
ARMOUR STONE	8	69	0	0
ASPHALT AGGREGATE	4 115	21 631	466	2 170
CONCRETE AGGREGATE	4 279	23 692	153	549
DOLOMITE	109	767	0	0
DRAINAGE STONE	125	567	0	0
FILL	5 401	21 993	0	0
RAILROAD BALLAST	198	1 063	840	6 490
RIPRAP	64	127	0	0
ROAD METAL	30 496	125 530	667	2 236
MANUFACTURED SAND	27	92	0	0
SEWERS	3	11	0	0
SEWERS & DRIVEWAYS	21	136	0	0
STRUCTURAL CLAY TILE	0	0	29	17
WINTER SAND	276	1 580	1	5
TOTAL FOR CRUSHED STONE	45 122	197 258	2 156	11 467
TOTAL	49 790	238 410	11 914	33 671

* REFERS TO STONE SOLD AND CONSUMED BY STONE PRODUCERS.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REPORT OF ALL STONE PRODUCTION
IN THE PROVINCE OF ONTARIO
1986

TYPE OF STONE	SOLD * TONNES IN 000'S	SOLD * $ VALUE IN 000'S	CONSUMED * TONNES IN 000'S	CONSUMED * $ VALUE IN 000'S
DIMENSIONAL STONE				
BUILDING STONE, ROUGH	23	1 578	20	882
MONUMENTAL AND ORNAMENTAL STONE	18	2 902	1	69
OTHER(FLAGSTONE, ETC.)	19	1 666	0	0
TOTAL FOR DIMENSIONAL STONE	60	6 146	21	951
CHEMICAL PROCESS STONE				
CEMENT PLANTS, CANADIAN	921	3 904	5 937	7 066
FLUX IN IRON AND STEEL FURNACES	1 009	4 103	0	0
FLUX IN NON-FERROUS SMELTERS	0	0	1	684
GLASS FACTORIES	120	2 400	0	0
LIME PLANTS, CANADIAN	1 389	5 908	1 066	7 604
MG METAL PRODUCTION	0	0	0	0
PAINT BASE	6	110	0	0
PULP AND PAPER MILLS	0	0	0	0
SODA ASH	0	0	592	3 671
SUGAR REFINERIES	0	0	0	0
TOTAL FOR CHEMICAL PROCESS STONE	3 445	16 425	7 596	19 025
PULVERIZED STONE				
AGRICULTURAL PURPOSES AND FERTILIZER PLANTS	305	3 857	0	0
ASPHALT FILLER	57	187	0	0
CALCITE PRODUCTS	130	7 008	0	0
CARPET BACKING	15	241	0	0
DUSTING COAL MINES	0	0	0	0
MINE BACKFILL	0	0	478	1 732
SAND	0	2	0	0
WHITING	0	0	0	0
TOTAL FOR PULVERIZED STONE	507	11 295	478	1 732

* REFERS TO STONE SOLD AND CONSUMED BY STONE PRODUCERS.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REPORT OF ALL STONE PRODUCTION
IN THE PROVINCE OF ONTARIO
1986

	SOLD *		CONSUMED *	
TYPE OF STONE	TONNES IN 000'S	$ VALUE IN 000'S	TONNES IN 000'S	$ VALUE IN 000'S
MISCELLANEOUS STONE				
ARMOUR STONE	74	553	0	0
BUILDING BRICK	0	0	163	618
CLAY TILE PRODUCTS	0	0	0	0
CRUSHED STONE FOR ARTIFICIAL STONE	0	0	0	0
DRAINAGE STONE	7	39	0	0
FILL	54	164	0	0
GABION	32	213	0	0
POULTRY GRIT	13	687	0	0
PRECAST AGGREGATE	0	55	0	0
RAW SHALE	33	23	0	0
ROOFING GRANULES	305	6 003	0	0
RUBBLE AND RIPRAP	391	1 613	0	0
SCREENINGS	63	197	0	0
STUCCO DASH	0	63	0	0
TERRAZZO CHIPS	2	304	0	0
TOTAL FOR MISCELLANEOUS STONE	974	9 914	163	618
CRUSHED STONE				
ARMOUR STONE	5	39	0	0
ASPHALT AGGREGATE	2 437	12 486	600	1 639
BRICK MANUFACTURING	0	0	789	3 129
BUILDINGS	196	603	0	0
CLAY TILE	0	0	23	17
CLEAR STONE	2	8	0	0
CONCRETE AGGREGATE	3 294	16 791	56	190
DOLOMITE	111	732	0	0
DRAINAGE STONE	1 704	8 589	0	0
FILL	881	2 755	0	0
MANUFACTURED SAND	45	336	0	0
PRIME ROCK	9	27	0	0
RAILROAD BALLAST	534	2 123	429	3 698
ROAD METAL	27 209	116 026	537	1 633
SEWERS	1 086	5 427	0	0
WINTER SAND	66	458	13	73
TOTAL FOR CRUSHED STONE	37 579	166 400	2 447	10 379
TOTAL	42 565	210 180	10 705	32 705

* REFERS TO STONE SOLD AND CONSUMED BY STONE PRODUCERS.

SOURCE: CNTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COSTS OF THE ONTARIO MINERAL INDUSTRY

DIRECT COSTS OF THE ONTARIO MINERAL INDUSTRY

	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
GOLD QUARTZ MINES					
1981	3 438	77 224	9 936	29 776	116 936
1982	3 275	88 259	13 018	34 509	135 786
1983	3 578	98 283	15 921	39 801	154 005
1984	3 823	118 391	20 320	70 711	209 422
1985	3 599	118 310	25 271	72 368	215 948
1986	3 969	143 205	31 382	91 675	266 262
1987	4 550	165 841	38 263	108 545	312 648
URANIUM MINES					
1981	5 172	149 537	28 443	95 265	273 245
1982	4 860	174 803	36 455	108 663	319 922
1983	4 642	166 534	36 654	105 514	308 701
1984	4 937	190 398	44 263	114 267	348 928
1985	4 684	187 430	44 258	111 457	343 145
1986	4 303	181 864	41 018	102 545	325 427
1987	4 043	170 698	37 151	89 102	296 950
IRON MINES					
1981	2 168	58 824	33 425	63 871	156 121
1982	1 716	52 588	28 258	43 577	124 422
1983	1 512	53 604	29 409	38 699	121 713
1984	1 592	62 643	33 353	46 294	142 290
1985	1 476	57 715	33 881	48 945	140 540
1986	1 240	48 675	28 915	45 456	123 046
1987	1 090	42 976	25 761	43 150	111 887
COPPER-GOLD-SILVER M					
1981	3 427	89 399	22 747	81 159	193 305
1982	3 279	93 581	23 705	76 597	193 884
1983	2 947	90 227	23 834	68 849	182 910
1984	2 900	93 930	24 994	71 206	190 130
1985	2 676	90 566	26 525	74 917	192 008
1986	2 574	93 858	26 900	66 520	187 277
1987	2 664	103 639	28 000	64 562	196 201

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COSTS OF THE ONTARIO MINERAL INDUSTRY

	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
NICKEL-COPPER MINES					
1981	11 384	250 900	19 452	183 758	454 110
1982	10 558	193 205	17 982	41 715	252 902
1983	8 515	197 680	29 986	80 425	308 091
1984	8 202	246 327	35 382	107 984	389 694
1985	7 338	246 904	39 228	119 804	405 936
1986	6 732	238 257	45 691	100 723	384 671
1987	6 094	225 181	47 464	83 613	356 259
SILVER-COBALT MINES					
1981	229	4 860	551	1 497	6 907
1982	195	5 361	672	1 826	7 859
1983	194	4 749	668	2 286	7 703
1984	184	4 526	752	2 565	7 844
1985	118	3 631	618	1 271	5 520
1986	104	3 037	448	1 105	4 591
1987	138	4 008	690	1 492	6 190
PEAT BOG					
1981	35	349	51	425	826
1982	33	364	34	169	567
1983	34	414	34	227	675
1984	35	435	35	199	668
1985	30	426	40	206	672
1986	30	443	34	261	738
1987	27	432	28	135	595
GYPSUM MINES					
1981	161	2 896	1 185	3 311	7 392
1982	126	2 456	1 172	2 166	5 795
1983	152	3 952	1 912	4 126	9 990
1984	184	4 992	2 270	5 450	12 712
1985	184	5 640	2 513	5 026	13 179
1986	215	7 015	2 939	6 221	16 175
1987	217	7 463	2 729	7 089	17 282

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COSTS OF THE ONTARIO MINERAL INDUSTRY

	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
TALC & SOAPSTONE M					
1981	59	1 101	732	838	2 671
1982	70	1 439	870	1 051	3 360
1983	78	1 705	1 165	1 497	4 367
1984	91	2 045	1 402	1 753	5 200
1985	119	3 160	1 602	1 910	6 672
1986	115	3 343	1 533	1 942	6 819
1987	108	3 611	1 935	2 592	8 138
FELDSPAR & QUARTZ M					
1981	330	7 385	2 429	4 640	14 454
1982	290	7 699	2 407	5 036	15 142
1983	288	7 346	2 636	5 196	15 178
1984	263	7 124	2 799	5 254	15 177
1985	269	7 855	2 947	5 430	16 233
1986	270	8 072	2 834	5 026	15 933
1987	268	9 198	2 975	5 738	17 910
SALT MINES					
1981	706	17 361	5 204	12 640	35 206
1982	748	21 824	5 964	14 104	41 892
1983	773	25 042	7 209	14 315	46 566
1984	809	26 261	7 875	14 316	48 452
1985	727	26 413	8 175	16 078	50 666
1986	765	32 572	7 298	12 911	52 781
1987	740	31 642	6 517	12 096	50 256
MISC. NON-METAL M					
1981	35	580	62	140	782
1982	31	558	49	110	717
1983	28	560	56	123	739
1984	29	581	68	150	799
1985	32	652	105	193	950
1986	41	900	141	173	1 213
1987	41	992	116	226	1 334

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COSTS OF THE ONTARIO MINERAL INDUSTRY

	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
GRANITE QUARRIES					
1981	138	2 599	1 109	3 602	7 310
1982	132	2 531	1 156	5 150	8 837
1983	155	3 536	1 484	5 423	10 443
1984	170	4 177	1 484	4 649	10 310
1985	148	N/A	N/A	N/A	N/A
1986	141	4 167	1 501	5 357	11 025
1987	141	4 685	1 435	6 958	13 078
LIMESTONE QUARRIES					
1981	1 317	23 469	8 383	23 162	55 014
1982	1 059	28 095	7 172	20 836	56 103
1983	1 002	21 647	7 001	15 921	44 569
1984	1 148	32 279	9 263	20 290	61 832
1985	1 165	36 412	43 420	37 076	116 908
1986	1 578	51 445	33 482	46 352	131 279
1987	1 944	62 310	33 105	61 557	156 972
MARBLE QUARRIES					
1981	4	N/A	N/A	N/A	N/A
1982	5	N/A	N/A	N/A	N/A
1985	1	N/A	N/A	N/A	N/A
1986	11	N/A	N/A	N/A	N/A
1987	7	N/A	N/A	N/A	N/A
SANDSTONE QUARRIES					
1981	4	N/A	N/A	N/A	N/A
1982	9	N/A	N/A	N/A	N/A
1983	11	N/A	N/A	N/A	N/A
1984	8	N/A	N/A	N/A	N/A
1985	3	N/A	N/A	N/A	N/A
1986	8	N/A	N/A	N/A	N/A
1987	5	N/A	N/A	N/A	N/A

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COSTS OF THE ONTARIO MINERAL INDUSTRY

	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
SHALE QUARRIES					
1981	5	N/A	N/A	N/A	N/A
1982	3	N/A	N/A	N/A	N/A
1983	28	N/A	N/A	N/A	N/A
1984	26	N/A	N/A	N/A	N/A
1985	29	N/A	N/A	N/A	N/A
1986	36	N/A	N/A	N/A	N/A
1987	34	N/A	N/A	N/A	N/A
SLATE QUARRIES					
1981	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A
1984	2	N/A	N/A	N/A	N/A
1985	2	N/A	N/A	N/A	N/A
1986	2	N/A	N/A	N/A	N/A
1987	1	N/A	N/A	N/A	N/A
SAND AND GRAVEL PITS					
1981	1 159	20 470	8 001	14 861	43 332
1982	916	18 499	7 069	10 779	36 347
1983	898	20 024	7 031	12 619	39 674
1984	728	18 179	7 149	10 822	36 149
1985	1 177	28 910	10 750	20 789	60 449
1986	2 292	64 622	13 472	31 782	109 876
1987	2 796	87 116	15 612	33 421	136 148
SMELTING & REFINING					
1981	9 347	211 664	113 556	101 297	426 517
1982	8 907	201 901	74 476	80 883	357 260
1983	7 989	208 509	92 520	82 742	383 771
1984	7 506	226 256	104 174	95 947	426 377
1985	7 004	223 106	111 201	112 084	446 391
1986	6 703	222 301	104 657	108 287	435 245
1987	6 310	227 315	104 316	125 498	457 129

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COSTS OF THE ONTARIO MINERAL INDUSTRY

	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
CLAY PRODUCTS MANUF.					
1981	972	18 992	12 239	9 447	40 678
1982	770	15 900	10 540	7 340	33 780
1983	875	20 458	15 806	11 910	48 175
1984	936	21 104	17 307	13 221	51 632
1985	739	20 144	15 159	12 495	47 798
1986	682	21 200	16 687	13 527	51 414
1987	822	26 977	15 136	14 954	57 067
CEMENT MANUFACTURERS					
1981	1 244	34 896	51 387	33 436	119 719
1982	1 110	34 360	47 681	29 762	111 803
1983	1 130	35 203	45 230	31 802	112 235
1984	1 120	37 229	53 361	35 474	126 064
1985	1 060	38 464	66 130	45 768	150 362
1986	1 102	42 889	68 753	46 670	158 312
1987	1 122	47 298	72 892	69 784	189 975
LIME MANUFACTURERS					
1981	487	11 081	30 819	10 364	52 264
1982	458	11 865	28 030	10 067	49 962
1983	449	12 827	29 983	10 157	52 967
1984	469	14 232	32 172	11 639	58 042
1985	393	13 531	32 528	13 714	59 773
1986	430	15 931	27 664	12 679	56 274
1987	384	14 283	24 843	18 117	57 244
GRAND TOTAL *					
1981	41 821	983 587	349 711	673 489	2 006 789
1982	38 550	955 288	306 710	494 340	1 756 340
1983	35 282	972 300	348 539	531 632	1 852 472
1984	35 186	1 111 109	398 423	632 191	2 141 722
1985	32 973	1 109 269	464 351	699 531	2 273 150
1986	33 343	1 185 540	455 349	699 212	2 340 102
1987	33 546	1 236 942	458 968	748 629	2 444 540

* TOTAL IS UNDERESTIMATED SINCE N/A MAY BE CONSIDERED AS "0".

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COST OF THE ONTARIO MINERAL INDUSTRY BY MINING DIVISIONS

MINING DIVISION	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
1980					
KENORA	78	2 286	796	1 037	4 119
LARDER LAKE	1 148	25 083	7 391	48 729	81 203
PATRICIA	656	14 177	4 057	13 512	31 746
PORCUPINE	4 436	98 372	26 944	70 149	195 465
RED LAKE	1 236	28 947	12 277	22 628	63 852
SAULT STE MARIE	5 103	119 638	29 564	74 572	223 774
SOUTHERN ONT	7 852	152 289	104 163	119 746	376 198
SUDBURY	20 470	413 716	109 063	240 572	763 351
THUNDER BAY	772	17 333	2 634	10 209	30 176
TOTAL:	41 751	871 841	296 889	601 154	1 769 884
1981					
KENORA	0	0	24	195	219
LARDER LAKE	1 214	28 957	8 559	32 582	70 098
PATRICIA	668	18 169	6 750	15 352	40 271
PORCUPINE	4 806	115 976	32 080	78 606	226 662
RED LAKE	1 204	32 909	13 791	23 888	70 588
SAULT STE MARIE	5 460	156 139	34 822	98 009	288 970
SOUTHERN ONT	7 737	165 315	127 759	146 212	439 286
SUDBURY	20 052	449 134	122 886	264 244	836 264
THUNDER BAY	680	16 988	3 040	14 401	34 429
TOTAL:	41 821	983 587	349 711	673 489	2 006 787

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COST OF THE ONTARIO MINERAL INDUSTRY BY MINING DIVISIONS

MINING DIVISION	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
1982					
KENORA	1	6	7	8	21
LARDER LAKE	1 139	31 280	8 285	21 820	61 385
PATRICIA	466	15 116	5 661	8 817	29 594
PORCUPINE	5 047	138 723	47 567	103 350	289 640
RED LAKE	1 054	32 062	11 534	17 705	61 301
SAULT STE MARIE	5 229	182 640	42 877	110 827	336 344
SOUTHERN ONT	6 654	172 694	120 839	135 825	429 358
SUDBURY	18 256	363 356	66 309	82 658	512 323
THUNDER BAY	704	19 411	3 631	13 330	36 372
TOTAL:	38 550	955 288	306 710	494 340	1 756 338
1983					
KENORA	0	0	0	0	0
LARDER LAKE	1 093	32 185	8 848	21 274	62 307
PATRICIA	443	13 361	4 956	10 445	28 762
PORCUPINE	5 012	145 797	53 992	92 837	292 626
RED LAKE	985	32 801	10 775	15 830	59 406
SAULT STE MARIE	5 397	191 460	47 697	115 857	355 014
SOUTHERN ONT	6 515	169 421	126 056	133 166	428 643
SUDBURY	15 124	366 343	92 059	129 722	588 124
THUNDER BAY	713	20 932	4 156	12 501	37 589
TOTAL:	35 282	972 300	348 539	531 632	1 852 471

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COST OF THE ONTARIO MINERAL INDUSTRY BY MINING DIVISIONS

MINING DIVISION	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
1984					
KENORA	0	0	0	0	0
LARDER LAKE	1 224	38 384	11 086	28 811	78 281
PATRICIA	458	15 230	5 270	10 711	31 211
PORCUPINE	5 061	160 984	60 965	124 894	346 843
RED LAKE	1 019	36 964	11 948	19 688	68 600
SAULT STE MARIE	5 876	220 511	56 595	127 004	404 110
SOUTHERN ONT	6 544	185 268	142 616	145 990	473 874
SUDBURY	14 345	432 859	105 684	164 577	703 120
THUNDER BAY	659	20 909	4 259	10 516	35 684
TOTAL:	35 186	1 111 109	398 423	632 191	2 141 723
1985					
KENORA	11	306	109	123	538
LARDER LAKE	1 194	38 574	11 278	26 603	76 455
PATRICIA	300	11 390	4 570	8 954	24 914
PORCUPINE	4 727	156 175	66 520	135 232	357 927
RED LAKE	900	32 206	11 230	12 398	55 834
SAULT STE MARIE	5 498	219 364	57 859	129 901	407 124
SOUTHERN ONT	6 445	194 061	191 060	180 153	565 274
SUDBURY	13 071	429 959	113 525	189 236	732 720
THUNDER BAY	827	27 234	8 200	16 931	52 365
TOTAL:	32 973	1 109 269	464 351	699 531	2 273 151

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

DIRECT COST OF THE ONTARIO MINERAL INDUSTRY
BY MINING DIVISIONS

MINING DIVISION	TOTAL EMPLOYMENT	WAGES + SALARIES IN 000'S $	FUEL + ELECTRICITY IN 000'S $	PROCESS SUPPLIES IN 000'S $	TOTAL COST IN 000'S $
1986					
KENORA	46	1 321	0	0	1 321
LARDER LAKE	1 233	41 973	12 810	30 250	85 033
PATRICIA	349	15 525	5 219	10 374	31 118
PORCUPINE	4 503	158 396	67 064	124 410	349 870
RED LAKE	828	29 883	5 891	9 543	45 317
SAULT STE MARIE	5 099	213 424	53 469	118 266	385 159
SOUTHERN ONT	7 832	257 998	183 919	204 364	646 281
SUDBURY	12 164	418 146	112 469	165 464	696 079
THUNDER BAY	1 289	48 874	14 509	36 540	99 923
TOTAL:	33 343	1 185 540	455 350	699 211	2 340 101
1987					
KENORA	42	1 536	0	0	1 536
LARDER LAKE	1 219	41 107	13 794	28 922	83 823
PATRICIA	337	15 002	5 021	12 866	32 889
PORCUPINE	3 888	142 407	35 444	97 494	275 345
RED LAKE	831	31 445	4 293	9 795	45 533
SAULT STE MARIE	4 609	192 273	46 724	101 534	340 531
SOUTHERN ONT	7 948	276 665	173 412	226 081	676 158
SUDBURY	13 101	477 275	162 498	229 561	869 334
THUNDER BAY	1 571	59 232	17 782	42 376	119 390
TOTAL:	33 546	1 236 942	458 968	748 629	2 444 539

NOTE: EMPLOYMENT FOR SAND & GRAVEL DOES NOT INCLUDE SMALL COMPANIES.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINING INDUSTRY

COST OF FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY*

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE **	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
	IN 000'S $								
GOLD QUARTZ MINES									
1981	13	868	138	19	761	546	0	257	7 334
1982	18	1 113	383	222	879	744	1	417	9 229
1983	38	1 351	316	83	1 660	815	0	581	11 078
1984	42	1 169	602	155	3 147	803	0	598	13 804
1985	4	1 392	587	150	3 733	1 122	140	979	17 164
1986	5	1 671	442	230	3 623	812	247	2 663	21 690
1987	2	1 715	507	188	4 083	905	229	2 081	28 554
URANIUM MINES									
1981	31	0	387	132	2 063	324	8 781	3 853	12 872
1982	80	0	406	69	2 532	213	10 448	5 155	17 552
1983	44	0	412	42	2 337	165	10 886	4 232	18 536
1984	37	0	298	0	2 714	167	13 064	5 200	22 785
1985	19	2 831	347	0	2 850	101	10 590	2 897	24 623
1986	3	12 417	279	0	2 445	4	4	493	25 373
1987	4	9 013	325	0	2 186	0	41	135	25 447
IRON MINES									
1981	3 040	7 975	391	0	4 290	708	1 421	104	15 495
1982	2 355	6 539	366	0	3 219	764	1 034	145	13 835
1983	3 431	6 797	296	0	2 897	719	1 605	166	13 497
1984	2 958	7 522	266	0	3 567	677	1 984	295	16 084
1985	3 132	7 860	207	0	3 040	740	2 055	229	16 618
1986	2 687	7 231	126	0	2 171	629	1 920	213	13 937
1987	3 037	5 925	85	0	1 934	360	922	154	13 345

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

COST OF FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY*

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE **	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
					IN 000'S $				
COPPER-GOLD-SILVER M									
1981	0	2 613	429	217	2 373	1 073	865	1 591	13 585
1982	1	3 809	444	197	2 361	238	1 006	1 811	13 838
1983	0	4 288	413	164	2 092	411	1 017	1 376	14 073
1984	1	4 283	340	99	1 755	144	1 442	914	16 017
1985	1	4 421	346	110	2 123	132	1 021	1 090	17 282
1986	1	3 872	237	90	1 913	116	911	1 137	18 622
1987	0	2 951	232	62	1 656	76	872	1 720	20 429
NICKEL-COPPER MINES									
1981	0	4 091	321	1	1 766	758	1 212	1 104	10 127
1982	0	3 170	226	0	960	853	1 031	794	10 947
1983	0	3 363	369	2	2 051	556	1 196	359	22 074
1984	0	4 106	159	2	2 981	464	1 325	662	25 663
1985	0	5 536	386	1	3 068	586	178	120	29 332
1986	0	6 328	278	1	570	282	0	178	38 044
1987	1 106	4 455	219	0	2 088	92	0	3	39 488
SILVER-COBALT MINES									
1981	0	0	41	0	8	92	0	0	396
1982	0	0	42	0	35	57	24	0	515
1983	0	0	52	0	5	54	0	0	557
1984	0	0	81	0	5	68	0	0	598
1985	0	0	39	0	1	63	0	0	516
1986	0	0	44	0	2	4	0	0	398
1987	0	0	46	0	2	0	0	0	641

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

COST OF FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY *

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE **	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
	IN 000'S $								
PEAT BOG									
1981	0	20	23	0	0	0	0	0	8
1982	0	6	25	0	0	0	0	0	4
1983	0	0	30	0	0	0	0	0	4
1984	0	0	30	0	0	0	0	0	4
1985	0	0	35	0	0	0	0	0	5
1986	0	0	30	0	0	0	0	0	4
1987	0	0	25	0	0	0	0	0	4
GYPSUM MINES									
1981	0	626	0	0	48	0	0	11	500
1982	0	663	0	0	32	2	0	10	465
1983	0	1 179	0	0	48	0	0	6	679
1984	0	1 348	0	0	61	24	0	25	812
1985	0	1 468	0	0	43	41	0	13	948
1986	0	1 672	0	0	129	0	0	16	1 121
1987	0	1 379	0	0	125	0	0	8	1 218
TALC & SOAPSTONE M									
1981	0	432	3	24	13	0	0	0	260
1982	0	517	4	12	22	53	0	0	260
1983	0	716	6	19	42	51	0	0	331
1984	0	808	9	27	50	26	0	0	461
1985	0	905	7	28	35	42	0	0	565
1986	0	895	6	19	35	44	0	9	561
1987	0	1 023	7	19	41	49	0	8	788

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

COST OF FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY*

IN 000'S $

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE **	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
FELDSPAR & QUARTZ M									
1981	0	194	77	0	325	500	0	9	1 323
1982	0	232	63	0	258	531	0	12	1 311
1983	0	265	74	0	268	564	0	11	1 453
1984	0	255	82	0	287	562	0	15	1 598
1985	0	244	96	0	271	590	0	17	1 729
1986	0	211	88	0	258	499	0	15	1 762
1987	0	181	80	0	244	461	0	14	1 994
SALT MINES									
1981	0	3 363	8	32	502	2	0	20	1 277
1982	0	3 819	7	15	668	0	0	22	1 433
1983	0	4 551	5	2	671	0	0	24	1 956
1984	0	4 805	5	0	645	0	0	25	2 396
1985	0	4 817	5	0	728	0	0	24	2 601
1986	0	4 237	3	0	584	0	0	61	2 412
1987	0	3 459	3	0	542	0	0	38	2 474
MISC. NON-METAL M									
1981	0	7	0	0	10	0	0	0	45
1982	0	8	4	0	5	1	0	0	31
1983	0	4	3	0	7	0	0	0	42
1984	0	6	0	0	13	0	0	0	49
1985	0	12	1	0	15	0	0	0	76
1986	0	15	1	0	14	0	0	0	76
1987	0	4	3	0	14	0	0	1	95

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

COST OF FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY *

IN 000'S $

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE **	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
GRANITE QUARRIES									
1981	0	75	5	0	69	722	0	6	232
1982	0	668	6	0	93	117	0	0	271
1983	0	1 034	7	0	105	0	0	0	338
1984	0	1 008	10	0	115	0	0	0	352
1985	0	0	0	0	0	0	0	0	0
1986	0	847	9	0	187	0	0	0	458
1987	0	729	12	0	167	13	0	0	515
LIMESTONE QUARRIES									
1981	0	395	835	121	3 996	547	123	32	2 336
1982	0	639	583	90	3 407	275	45	41	2 091
1983	0	810	548	15	3 173	192	0	36	2 227
1984	0	670	610	144	4 455	363	0	56	2 965
1985	0	14 565	574	1	5 156	373	0	31	10 369
1986	8 633	4 287	625	277	5 871	456	6	42	11 422
1987	7 112	6 047	607	278	5 999	680	9	14	11 778
MARBLE QUARRIES									
1981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

COST OF FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY*

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE **	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
	IN 000'S $								
SANDSTONE QUARRIES									
1981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SHALE QUARRIES									
1981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SLATE QUARRIES									
1981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

COST OF FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY *

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE **	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
					IN 000'S $				
SAND AND GRAVEL PITS									
1981	0	250	1 239	142	4 966	350	84	15	977
1982	0	202	1 096	282	4 443	251	0	17	779
1983	0	259	782	134	4 324	474	102	41	915
1984	0	413	777	87	4 696	27	0	33	1 116
1985	0	631	1 040	131	7 001	363	230	42	1 305
1986	0	625	2 056	28	8 015	533	140	39	2 036
1987	0	380	2 059	66	10 013	514	93	41	2 367
SMELTING & REFINING									
1981	0	36 548	374	16	187	1 430	19 503	115	55 161
1982	0	28 694	46	0	95	3 506	11 314	143	29 714
1983	0	33 516	44	0	119	895	17 178	228	38 491
1984	0	37 502	84	0	147	1 491	17 658	257	49 595
1985	0	41 780	80	0	205	1 354	9 260	192	56 292
1986	0	38 145	28	0	188	1 262	2 358	141	60 696
1987	0	36 598	37	0	168	1 317	154	135	64 272
CLAY PRODUCTS MANUF.									
1981	0	9 138	140	7	309	593	0	89	1 944
1982	0	7 736	75	3	362	616	0	76	1 654
1983	0	12 248	85	2	470	686	0	104	2 194
1984	0	13 578	68	0	447	578	0	120	2 517
1985	0	12 041	56	0	444	127	0	101	1 813
1986	0	13 330	27	3	357	0	0	172	2 799
1987	0	11 153	48	0	500	0	0	105	3 210

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

COST OF FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY *

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE **	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
	IN 000'S $								
CEMENT MANUFACTURERS									
1981	18 688	10 849	100	1	939	375	6 334	19	14 033
1982	20 377	9 089	92	1	874	313	3 068	30	13 798
1983	19 286	7 545	86	1	582	296	2 768	55	14 439
1984	23 327	8 452	98	1	631	525	2 938	56	17 334
1985	31 166	8 799	89	1	676	226	4 411	58	20 704
1986	35 082	7 530	108	1	875	218	2 468	83	24 263
1987	35 160	6 711	112	1	769	194	3 120	53	25 733
LIME MANUFACTURERS									
1981	4 716	19 235	64	0	484	25	3 920	5	2 368
1982	5 633	17 238	74	0	614	27	2 258	6	2 182
1983	7 385	19 599	46	0	427	17	187	3	2 318
1984	7 547	20 716	45	0	322	29	1 031	5	2 478
1985	9 590	18 247	81	0	528	31	872	33	3 279
1986	8 327	14 776	74	0	608	44	324	61	3 450
1987	8 183	10 807	93	0	590	2	1 066	279	3 824
GRAND TOTAL FOR ALL SIC'S									
1981	26 488	96 679	4 575	712	23 109	8 045	42 243	7 230	140 273
1982	28 464	84 142	3 942	891	20 859	8 561	30 229	8 679	119 909
1983	30 184	97 525	3 574	464	21 278	5 895	34 939	7 222	145 202
1984	33 912	106 641	3 564	515	26 038	5 948	39 442	8 261	176 628
1985	43 912	125 549	3 976	422	29 917	5 891	28 757	5 826	205 221
1986	54 738	118 089	4 461	649	27 845	4 903	8 378	5 323	229 124
1987	54 604	102 530	4 500	614	31 121	4 663	6 506	4 789	246 176

* COST OF FUEL AND ELECTRICITY DOES NOT INCLUDE STEAM AND "OTHER" FUELS.

** COST OF MOTOR GASOLINE DOES NOT INCLUDE AVIATION

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE *	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
					IN 000'S				
	TONNE	K CU M	LITRE	LITRE	LITRE	LITRE	LITRE	LITRE	1000 KWH
GOLD QUARTZ MINES									
1981	0	7	361	57	2 452	2 486	0	1 433	294
1982	0	9	972	817	2 370	2 863	2	2 204	335
1983	0	9	703	207	5 476	2 938	0	2 330	371
1984	0	7	1 273	353	10 495	2 766	0	2 246	450
1985	0	8	1 152	333	11 497	3 144	782	3 992	511
1986	0	10	1 011	618	11 025	2 910	1 093	12 519	610
1987	0	13	1 193	715	13 693	4 025	1 347	11 721	773
URANIUM MINES									
1981	0	0	1 168	504	8 490	1 381	54 915	25 490	555
1982	1	0	1 051	251	9 147	849	59 014	30 395	697
1983	0	0	1 003	224	8 311	662	58 174	21 373	657
1984	0	0	723	0	8 855	878	62 750	24 523	755
1985	0	18	756	0	8 852	341	47 946	12 869	720
1986	0	78	650	0	8 566	15	21	2 028	763
1987	0	68	746	0	8 995	0	282	685	719
IRON MINES									
1981	93	76	1 276	0	17 917	3 601	10 372	518	699
1982	67	51	977	0	11 863	3 222	6 279	679	508
1983	85	47	740	0	10 153	2 863	8 672	655	475
1984	75	49	679	0	12 031	2 651	8 888	1 108	560
1985	79	53	513	0	9 489	2 525	9 220	839	531
1986	65	55	348	0	7 800	1 950	8 536	775	426
1987	64	51	286	0	7 209	1 332	6 162	577	393

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE *	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
					IN 000'S				
	TONNE	K CU M	LITRE	LITRE	LITRE	LITRE	LITRE	LITRE	1000 KWH
COPPER-GOLD-SILVER M									
1981	0	22	1 349	905	9 864	4 795	4 329	8 237	587
1982	0	28	1 170	728	8 406	942	5 138	8 209	551
1983	0	26	988	548	7 209	1 515	5 348	6 560	527
1984	0	26	787	355	5 985	477	5 329	4 153	557
1985	0	27	753	392	6 550	457	3 842	4 828	557
1986	0	27	550	318	6 448	440	5 055	6 520	566
1987	0	33	596	299	6 621	321	5 060	10 377	584
NICKEL-COPPER MINES									
1981	0	35	941	2	7 219	2 705	7 117	6 340	482
1982	0	24	646	2	3 412	3 516	5 812	4 429	367
1983	0	21	909	7	7 605	2 247	6 248	1 843	723
1984	0	25	395	5	9 675	1 706	6 128	3 342	913
1985	0	35	845	3	9 556	2 047	865	589	960
1986	0	42	626	1	1 911	963	0	767	1 167
1987	15	30	528	1	8 691	440	0	17	1 083
SILVER-COBALT MINES									
1981	0	0	122	1	23	384	0	0	13
1982	0	0	93	0	88	194	74	0	16
1983	0	0	108	0	13	163	0	0	15
1984	0	0	166	0	16	182	0	0	15
1985	0	0	78	0	1	160	0	0	11
1986	0	0	88	0	6	10	0	0	8
1987	0	0	96	0	6	0	0	0	12

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE *	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
	IN 000'S								
	TONNE	K CU M	LITRE	LITRE	LITRE	LITRE	LITRE	LITRE	1000 KWH
PEAT BOG									
1981	0	0	78	0	0	0	0	0	0
1982	0	0	68	0	0	0	0	0	0
1983	0	0	76	0	0	0	0	0	0
1984	0	0	61	0	0	0	0	0	0
1985	0	0	69	0	0	0	0	0	0
1986	0	0	67	0	0	0	0	0	0
1987	0	0	55	0	0	0	0	0	0
GYPSUM MINES									
1981	0	6	0	0	193	0	0	69	19
1982	0	6	0	0	114	10	0	44	16
1983	0	7	0	0	138	0	0	21	23
1984	0	8	0	0	188	87	0	86	26
1985	0	10	0	0	115	143	0	41	28
1986	0	10	0	0	381	0	0	70	32
1987	0	11	0	0	430	0	0	33	33
TALC & SOAPSTONE M									
1981	0	4	9	106	39	0	0	1	8
1982	0	4	11	38	58	234	0	0	9
1983	0	5	14	57	103	183	0	0	10
1984	0	5	20	79	85	76	0	0	12
1985	0	6	15	78	77	141	0	0	14
1986	0	5	16	52	36	75	0	35	14
1987	0	6	15	45	107	123	0	35	20

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE *	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
	IN 000'S								
	TONNE	K CU M	LITRE	LITRE	LITRE	LITRE	LITRE	LITRE	1000 KWH
FELDSPAR & QUARTZ M									
1981	0	2	232	0	1 229	2 350	0	45	51
1982	0	2	172	0	896	2 190	0	50	43
1983	0	2	197	0	958	2 289	0	42	44
1984	0	2	181	0	986	2 027	0	53	45
1985	0	2	204	0	846	2 022	0	55	44
1986	0	1	215	0	867	1 941	0	53	43
1987	0	1	203	0	945	2 046	0	56	48
SALT MINES									
1981	0	33	25	155	1 734	15	0	117	43
1982	0	29	20	55	2 143	0	0	115	44
1983	0	30	13	5	2 381	0	0	114	58
1984	0	30	12	0	2 205	0	0	118	67
1985	0	30	11	0	2 405	0	0	110	65
1986	0	31	9	0	2 134	0	0	244	57
1987	0	27	9	0	2 140	0	0	152	57
MISC. NON-METAL M									
1981	0	0	0	0	40	0	0	0	1
1982	0	0	10	0	16	4	0	0	1
1983	0	0	7	0	22	0	0	0	1
1984	0	0	0	0	37	0	0	0	1
1985	0	0	3	0	34	0	0	0	2
1986	0	0	2	1	34	0	0	1	2
1987	0	0	6	1	39	0	0	2	2

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY

IN 000'S

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE *	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
	TONNE	K CU M	LITRE	LITRE	LITRE	LITRE	LITRE	LITRE	1000 KWH
GRANITE QUARRIES									
1981	0	1	21	0	278	3 627	0	34	8
1982	0	4	20	0	333	526	0	0	8
1983	0	6	22	0	367	0	0	0	10
1984	0	6	23	0	370	0	0	0	9
1985	0	0	0	0	0	0	0	0	0
1986	0	5	27	0	505	0	0	0	11
1987	0	6	28	0	525	53	0	0	12
LIMESTONE QUARRIES									
1981	0	3	2 703	534	16 124	2 378	439	156	56
1982	0	5	1 627	387	12 271	1 131	226	178	59
1983	0	5	1 607	62	11 359	769	0	136	61
1984	0	4	1 530	488	15 029	1 298	0	212	74
1985	0	86	1 261	2	15 801	1 341	0	163	279
1986	151	30	1 641	991	19 219	1 719	19	208	297
1987	138	40	1 569	995	18 457	2 518	30	77	290
MARBLE QUARRIES									
1981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE *	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
	IN 000'S								
	TONNE	K CU M	LITRE	LITRE	LITRE	LITRE	LITRE	LITRE	1000 KWH
SANDSTONE QUARRIES									
1981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SHALE QUARRIES									
1981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SLATE QUARRIES									
1981	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1982	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1983	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1984	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1985	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1986	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1987	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE *	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
					IN 000'S				
	TONNE	K CU M	LITRE	LITRE	LITRE	LITRE	LITRE	LITRE	1000 KWH
SAND AND GRAVEL PITS									
1981	0	4	4 119	596	18 187	1 568	442	66	22
1982	0	2	3 113	915	14 360	1 102	0	79	24
1983	0	1	1 900	638	12 754	1 581	508	179	24
1984	0	2	1 914	428	13 791	92	0	133	23
1985	0	4	2 327	429	18 380	1 261	887	198	21
1986	0	38	5 179	87	23 891	2 520	767	157	38
1987	0	14	5 016	220	28 456	2 432	541	169	42
SMELTING & REFINING									
1981	0	321	1 152	43	598	7 744	129 517	687	2 422
1982	0	227	125	0	320	14 444	68 693	818	1 180
1983	0	220	118	0	407	3 541	86 557	1 026	1 411
1984	0	236	200	0	482	5 415	84 517	1 173	1 746
1985	0	285	180	0	620	4 629	40 846	810	1 771
1986	0	286	70	0	649	4 419	15 985	578	1 905
1987	0	330	88	0	638	5 670	756	681	1 842
CLAY PRODUCTS MANUF.									
1981	0	76	431	36	1 097	2 812	0	434	62
1982	0	53	200	18	1 029	2 574	0	340	46
1983	0	77	198	8	1 343	2 823	0	431	59
1984	0	101	155	79	1 992	1 245	0	495	64
1985	0	78	121	0	1 121	489	0	432	45
1986	0	91	57	9	972	0	0	656	62
1987	0	88	108	0	1 386	0	0	442	68

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

FUEL AND ELECTRICITY USED IN THE ONTARIO MINERAL INDUSTRY

	COAL AND COKE	NATURAL GAS	MOTOR GASOLINE *	KEROSENE STOVE OIL NO. 1	DIESEL OIL	LIGHT FUEL OIL NO. 2 + 3	HEAVY FUEL OIL NO. 4, 5+6	LIQUIFIED PETROLEUM GASES	ELECTRICITY PURCHASED + SERVICE
					IN 000'S				
	TONNE	K CU M	LITRE	LITRE	LITRE	LITRE	LITRE	LITRE	1000 KWH
CEMENT MANUFACTURERS									
1981	426	101	333	5	4 072	1 670	48 060	78	575
1982	400	68	263	3	3 082	1 318	19 185	111	496
1983	382	54	225	3	2 184	1 196	15 585	199	498
1984	453	60	238	2	2 232	1 916	14 788	190	552
1985	561	57	204	2	2 145	857	17 060	289	612
1986	621	52	248	2	2 736	853	19 381	351	711
1987	674	60	275	3	2 734	827	12 291	256	652
LIME MANUFACTURERS									
1981	70	165	222	0	2 089	115	29 243	32	93
1982	79	121	218	0	1 944	106	12 542	26	68
1983	107	119	135	0	1 566	68	1 027	14	68
1984	103	126	123	0	1 125	88	4 282	17	65
1985	123	112	199	0	1 735	105	3 355	92	88
1986	119	111	169	0	1 895	195	2 391	226	87
1987	130	94	219	0	1 702	6	7 226	1 462	94
GRAND TOTAL									
1981	589	856	14 542	2 944	91 645	37 631	284 434	43 737	6 097
1982	547	633	10 756	3 214	71 852	35 225	176 965	47 677	4 576
1983	574	629	8 963	1 759	72 349	22 838	182 119	34 923	5 141
1984	631	687	8 480	1 789	85 579	20 904	186 682	37 849	6 042
1985	763	811	8 691	1 239	89 224	19 662	124 803	25 307	6 365
1986	956	872	10 973	2 079	89 075	18 010	53 248	25 188	6 905
1987	1 021	872	11 036	2 279	102 774	19 793	33 695	26 742	6 829

* COST OF MOTOR GASOLINE DOES NOT INCLUDE AVIATION

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

EXPLORATION, DEVELOPMENT AND PRODUCTION IN THE ONTARIO MINERAL INDUSTRY

MINESITE EXPLORATION AND DEVELOPMENT WORK IN THE ONTARIO MINERAL INDUSTRY

	EXPLORATION DIAMOND DRILLING	DRILLING FOR ORE & WASTE ROCK	SHAFTS	DECLINES AND ADITS	RAISES AND WINZES	DRIFTS AND CROSSCUTS
			IN METRES			
GOLD QUARTZ MINES						
1981	106 203	2 082 729	0	122	6 705	16 026
1982	97 899	2 270 752	24 144	850	7 550	20 258
1983	121 792	2 605 984	38 427	410	6 509	16 459
1984	139 539	2 213 786	33 934	683	6 331	16 754
1985	108 598	2 748 397	2 106	2 096	8 339	27 714
1986	191 517	2 959 444	1 557	2 480	22 114	34 663
1987	190 480	3 519 615	0	6 130	19 282	64 478
URANIUM MINES						
1981	57 334	4 099 021	0	5 691	1 844	36 568
1982	52 343	7 342 400	0	2 713	7 674	69 773
1983	40 984	5 448 638	0	1 130	6 895	59 947
1984	50 527	8 475 054	0	1 139	7 861	61 116
1985	41 659	8 161 099	0	1 899	9 623	68 929
1986	37 661	8 015 155	0	0	8 368	72 577
1987	31 678	7 065 206	0	0	7 530	51 162
IRON MINES						
1981	11 208	433 150	4 689	2 743	542	0
1982	9 139	312 124	3 529	1 504	562	0
1983	32	236 025	2 531	866	433	0
1984	660	372 230	3 302	1 034	512	0
1985	5 295	292 674	2 889	382	552	0
1986	0	267 264	3 426	340	455	0
1987	0	242 064	2 793	41	438	0
COPPER-GOLD-SILVER M						
1981	74 159	1 632 800	94	2 238	7 326	20 241
1982	50 918	1 349 811	488	447	7 430	20 799
1983	64 760	1 161 428	3	845	6 652	19 563
1984	100 530	1 108 136	325	89	8 710	22 856
1985	59 848	1 159 451	517	2	8 800	24 028
1986	75 250	1 082 367	0	488	6 830	21 552
1987	80 554	960 349	0	948	6 628	23 787

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

MINESITE EXPLORATION AND DEVELOPMENT WORK IN THE ONTARIO MINERAL INDUSTRY

	EXPLORATION DIAMOND DRILLING	DRILLING FOR ORE & WASTE ROCK	SHAFTS	DECLINES AND ADITS	RAISES AND WINZES	DRIFTS AND CROSSCUTS
			IN METRES			
NICKEL-COPPER MINES						
1981	139 186	9 553 242	0	6 913	4 316	27 565
1982	81 651	4 498 125	0	3 196	1 956	12 765
1983	62 739	5 543 192	0	4 246	2 154	31 460
1984	105 806	7 284 273	258	5 425	4 805	57 536
1985	99 387	7 633 473	316	7 074	3 948	56 355
1986	99 430	5 596 374	0	7 770	3 917	39 289
1987	81 480	5 625 067	0	8 674	3 484	45 134
SILVER-COBALT MINES						
1981	21 329	172 528	0	0	257	1 376
1982	24 535	161 097	0	0	438	2 246
1983	38 453	158 959	0	0	853	1 177
1984	37 389	181 625	0	0	654	2 288
1985	30 469	93 713	0	0	360	992
1986	32 947	75 430	0	0	301	1 003
1987	29 132	193 734	45	0	399	1 031
GYPSUM MINES						
1981	0	113 891	0	0	0	0
1982	0	175 000	0	0	0	0
1983	762	361 812	0	0	0	0
1984	469	786 574	0	0	0	0
1985	521	731 520	0	0	0	0
1986	0	1 822 518	0	0	0	0
1987	0	624 317	0	0	0	0

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

MINESITE EXPLORATION AND DEVELOPMENT WORK IN THE ONTARIO MINERAL INDUSTRY

	EXPLORATION DIAMOND DRILLING	DRILLING FOR ORE & WASTE ROCK	SHAFTS	DECLINES AND ADITS	RAISES AND WINZES	DRIFTS AND CROSSCUTS
IN METRES						
TALC & SOAPSTONE M						
1981	1 327	0	0	40	0	0
1982	3 123	0	0	0	0	14
1983	28	1 050	0	0	0	21
1984	1 646	1 100	0	0	0	61
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	1 694	0	0	0	0	0
FELDSPAR & QUARTZ M						
1981	1 008	98 070	0	0	0	0
1982	0	48 755	0	0	0	0
1983	183	60 307	0	0	0	0
1984	2 347	112 092	0	0	0	0
1985	1 064	61 670	0	0	0	0
1986	0	72 339	0	0	0	0
1987	0	47 395	0	0	0	0
SALT MINES						
1981	0	0	0	0	0	0
1982	0	9	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	460	5	0	0	0	0
MISC. NON-METAL M						
1981	355	732	0	457	0	0
1982	0	406	0	0	0	0
1983	0	700	0	0	0	0
1984	0	500	0	0	0	0
1985	0	400	0	0	0	0
1986	0	0	0	0	0	0
1987	0	1 881	0	0	0	0

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

MINESITE EXPLORATION AND DEVELOPMENT WORK IN THE ONTARIO MINERAL INDUSTRY

	EXPLORATION DIAMOND DRILLING	DRILLING FOR ORE & WASTE ROCK	SHAFTS	DECLINES AND ADITS	RAISES AND WINZES	DRIFTS AND CROSSCUTS
	IN METRES					
GRAND TOTAL						
1981	412 109	18 186 163	4 783	18 204	20 990	101 776
1982	319 608	16 158 479	28 161	8 710	25 610	125 855
1983	329 733	15 578 095	40 961	7 497	23 496	128 627
1984	438 913	20 535 370	37 819	8 370	28 873	160 611
1985	346 841	20 882 397	5 828	11 453	31 622	178 018
1986	436 805	19 890 891	4 983	11 078	41 985	169 084
1987	415 478	18 279 633	2 838	15 793	37 761	185 592

NOTE: EXPLORATION DIAMOND DRILLING INCLUDE "ON PROPERTY" EXPLORATION, TESTING AND ORE OUTLINE DRILLING.
THIS REPORT COVERS EXPLORATION AND DEVELOPMENT WORK PERFORMED BY THE PRODUCING MINES ONLY.

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

COST OF ALL PHYSICAL WORK AND SURVEYS PERFORMED IN ONTARIO 1987
(IN CURRENT DOLLARS)

1. GENERAL OR OFF-PROPERTY EXPLORATION

TYPE OF METAL/ MINERAL SOUGHT	DRILLING	GEOCHEMICAL	GEOLOGY	GEOPHYSICAL	AIRBORNE GEOPHYSICAL	ROCK WORKS	OTHER FIELD COSTS	TOTAL
GOLD	94 366 670	7 603 864	14 053 396	11 136 023	1 681 151	39 286 935	24 797 251	192 925 290
SILVER	404 742	0	1 769	15 000	0	1 000	8 421	430 932
PLATINUM GROUP	7 412 596	513 556	513 265	712 217	103 790	21 000	2 534 353	11 810 777
PREC. METALS*	4 005 917	123 250	481 286	180 865	149 519	1 079 589	951 121	6 935 547
BASE METALS	16 108 164	722 665	1 089 077	2 018 083	2 618 186	170 890	1 875 582	24 602 647
OTHER METALS/ MINERALS	2 130 748	672 436	1 035 216	248 360	307 319	270 410	2 411 917	7 076 406
GRAND TOTAL	124 428 837	9 635 771	17 174 009	14 310 548	4 859 965	40 829 824	32 542 645	243 781 599

2. MINESITE OR ON-PROPERTY EXPLORATION

TYPE OF METAL/ MINERAL SOUGHT	DRILLING	GEOCHEMICAL	GEOLOGY	GEOPHYSICAL	AIRBORNE GEOPHYSICAL	ROCK WORKS	OTHER FIELD COSTS	TOTAL
GOLD	13 048 634	1 662 255	10 654 105	51 657	11 046	616 912	3 069 071	29 113 680
SILVER	2 219 181	0	51 411	0	0	781 444	0	3 052 036
PLATINUM GROUP	1 265 760	0	0	82 818	0	0	3 638 497	4 987 075
PREC. METALS*	9 000	0	0	0	0	24 680	550 923	584 603
BASE METALS	6 691 936	15 584	54 528	15 000	0	441 987	624 129	7 843 164
OTHER METALS/ MINERALS	321 985	12 372	0	0	0	0	22 260	356 617
GRAND TOTAL	23 556 496	1 690 211	10 760 044	149 475	11 046	1 865 023	7 904 880	45 937 175

* denotes precious metals reported as groups

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION AND STATISTICS SECTION

COST OF ALL PHYSICAL WORK AND SURVEYS PERFORMED IN ONTARIO 1987
(IN CURRENT DOLLARS)

3. MINESITE DEVELOPMENT

TYPE OF METAL/ MINERAL SOUGHT	DRILLING	SHAFT	DRIFTS AND CROSS-CUTS	RAISES AND DECLINES	STRIPPING	OTHERS	TOTAL
GOLD	16 584 230	2 558 741	67 407 165	30 622 192	10 000	17 724 880	134 907 208
SILVER	130 701	133 927	1 419 013	553 273	0	423 511	2 660 425
PREC. METALS*	1 106 293	0	1 236 586	798 789	0	0	3 141 668
BASE METALS	4 789 766	111 812	45 407 831	17 549 395	331 872	47 310 179	115 500 855
OTHER METALS	1 332 241	0	49 460 427	24 095 846	8 697 935	142 743	83 729 192
OTHER METAL/ MINERAL GROUPS	771 055	0	0	825 000	89 823	435 488	2 121 366
GRAND TOTAL	24 714 286	2 804 480	164 931 022	74 444 495	9 129 630	66 036 801	342 060 714

* denotes precious metals reported as groups

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION AND STATISTICS SECTION

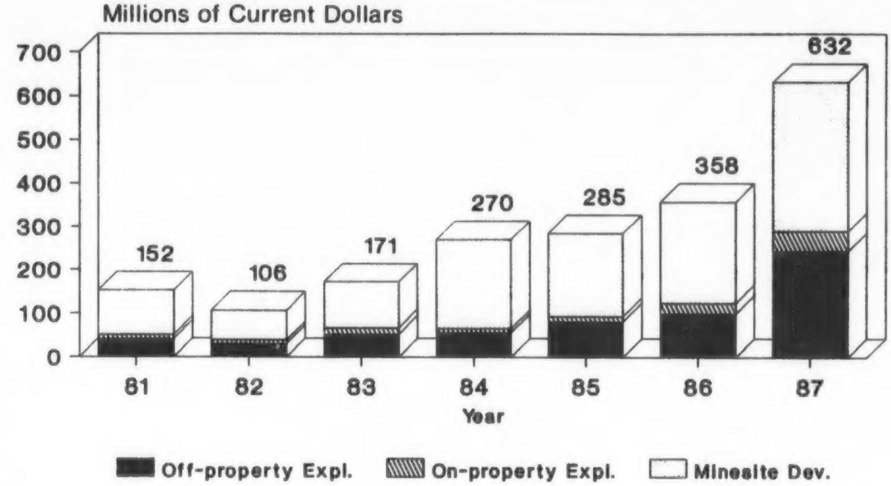
EXPLORATION AND DEVELOPMENT EXPENDITURES BY MINING DIVISION IN ONTARIO FOR 1987
(IN CURRENT DOLLARS)

MINING DIVISION	EXPLORATION			MINESITE DEVELOPMENT	TOTAL
	Off-property	On-property	Sub-total		
KENORA	22,781,390	537,597	23,318,987	199,593	23 518 580
LARDER LAKE	44,715,470	5,295,911	50,011,381	39,432,655	89 444 036
PATRICIA	22,615,688	5,192,972	27,808,660	7,629,461	35 438 121
PORCUPINE	47,251,215	3,563,627	50,814,842	56,904,290	107 719 132
RED LAKE	23,038,443	309,463	23,347,906	7,703,161	31 051 067
SAULT STE. MARIE	12,261,794	19,518,584	31,780,378	81,278,345	113 058 723
SOUTHERN ONTARIO	4,181,293	356,617	4,537,910	2,065,193	6 603 103
SUDBURY	11,375,319	2,330,488	13,705,807	85,113,109	98,818,916
THUNDER BAY	45,703,333	8,831,916	54,535,249	61,734,907	116,270,156
PROVINCE WIDE	9,857,654	n.a.	9,857,654	n.a.	9,857,654
GRAND TOTAL	243,781,599	45,937,175	289,718,774	342,060,714	631,779,488

n.a. - not applicable

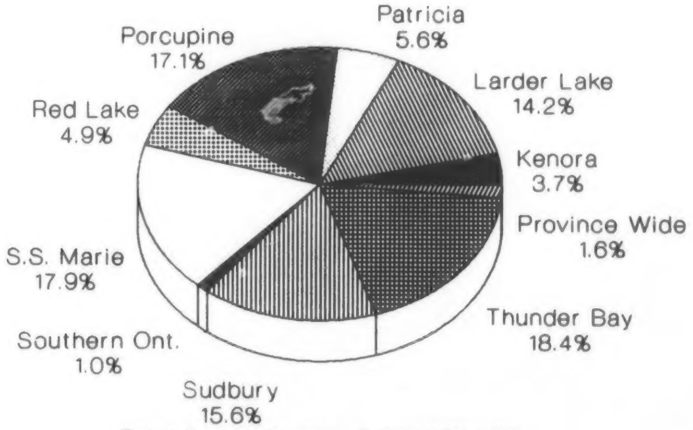
SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION AND STATISTICS SECTION

TOTAL EXPLORATION & DEVELOPMENT EXPENDITURES IN ONTARIO
1981 - 1987



Source: Information & Statistics Section
MNDM

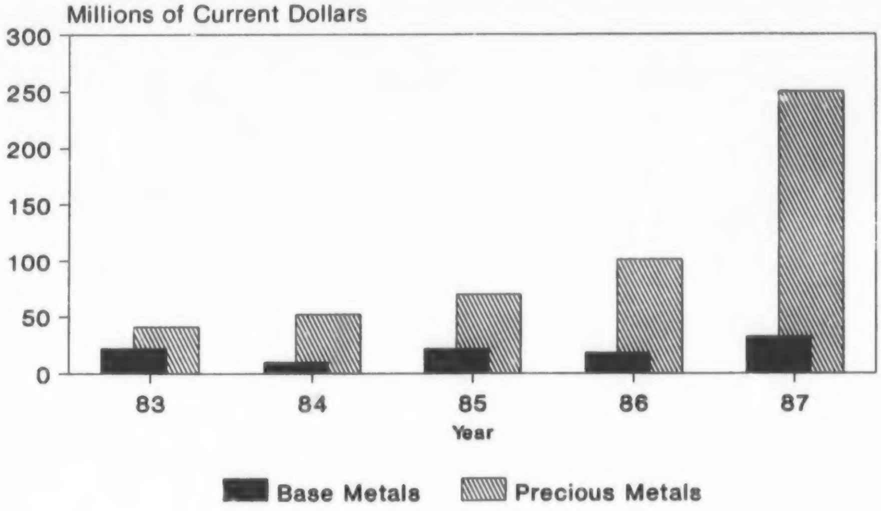
TOTAL EXPLORATION & DEVELOPMENT EXPENDITURES IN ONTARIO IN 1987
BY MINING DIVISIONS



Total Expenditures: $ 631,779,488

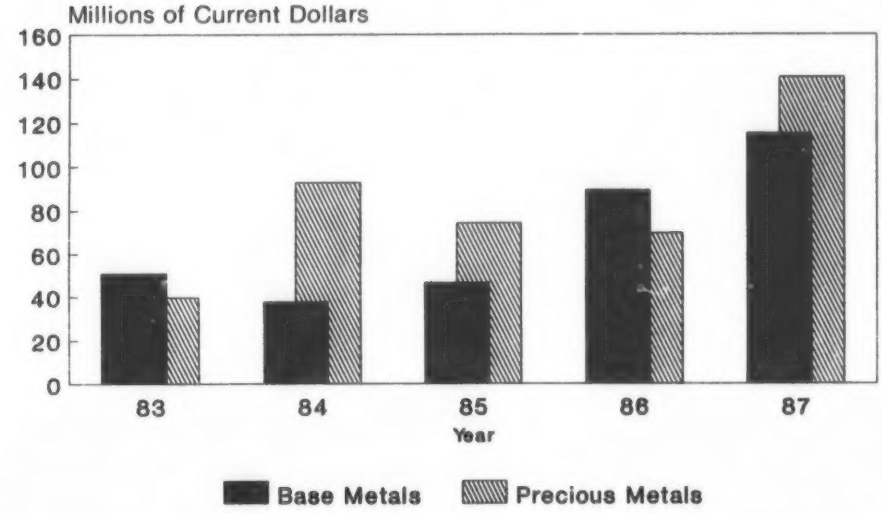
Source: Information & Statistics Section
MNDM

EXPLORATION EXPENDITURES FOR BASE METALS AND PRECIOUS METALS IN ONTARIO 1983 - 1987



Source: Information & Statistics Section
MNDM

MINESITE DEVELOPMENT EXPENDITURES FOR BASE METALS AND PRECIOUS METALS IN ONTARIO 1983 - 1987



Source: Information & Statistics Section
MNDM

MINING CLAIMS PROSPECTORS' LICENCES AND ASSESSMENT WORK

MINING CLAIMS AND PROSPECTORS' LICENCES IN ONTARIO

YEAR	MINING DIVISION	MINING CLAIMS RECORDED	MINING CLAIMS CANCELLED	MINING CLAIMS GOOD STANDING	PROSPECTORS' LICENCES ISSUED	PROSPECTORS' LICENCES RENEWED
1981	EASTERN ONTARIO	485	758	1 531	639	1 115
	KENORA	2 121	846	4 076	83	83
	LARDER LAKE	5 498	2 697	15 423	244	295
	PATRICIA	2 861	1 582	8 303	72	47
	PORCUPINE	8 934	2 956	24 731	271	308
	RED LAKE	1 719	1 249	4 889	64	96
	SAULT STE MARIE	1 474	830	3 109	67	91
	SUDBURY	3 087	650	6 116	202	189
	THUNDER BAY	6 844	4 426	13 663	263	231
	ONTARIO TOTAL	33 023	15 994	81 841	1 905	2 455
1982	EASTERN ONTARIO	354	617	1 115	572	1 230
	KENORA	1 579	1 609	4 046	64	78
	LARDER LAKE	3 253	5 218	13 458	185	303
	PATRICIA	842	1 766	7 737	34	37
	PORCUPINE	5 420	6 457	23 694	216	307
	RED LAKE	942	1 884	3 922	50	83
	SAULT STE MARIE	10 027	1 432	11 704	64	87
	SUDBURY	671	2 577	4 182	178	241
	THUNDER BAY	10 252	4 613	19 349	188	356
	ONTARIO TOTAL	33 340	26 173	89 207	1 551	2 722
1983	EASTERN ONTARIO	391	377	1 157	969	1 414
	KENORA	11 061	1 472	13 637	205	107
	LARDER LAKE	8 354	3 866	17 946	214	375
	PATRICIA	4 395	1 164	10 319	67	63
	PORCUPINE	11 859	4 967	30 586	311	343
	RED LAKE	2 413	1 204	5 130	47	76
	SAULT STE MARIE	14 745	754	25 695	172	210
	SUDBURY	1 261	805	4 439	252	238
	THUNDER BAY	15 835	1 537	33 721	425	316
	ONTARIO TOTAL	70 314	16 146	142 630	2 662	3 142
1984	EASTERN ONTARIO	555	498	1 254	731	1 696
	KENORA	3 261	3 042	13 854	129	132
	LARDER LAKE	7 943	4 492	21 397	208	352
	PATRICIA	5 009	4 074	10 625	67	56
	PORCUPINE	7 633	11 040	27 179	269	393
	RED LAKE	4 344	1 725	7 799	59	87
	SAULT STE MARIE	1 786	6 642	20 839	98	118
	SUDBURY	1 451	1 520	4 508	234	252
	THUNDER BAY	8 389	7 206	34 904	332	451
	ONTARIO TOTAL	40 371	40 239	142 359	2 127	3 537

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

MINING CLAIMS AND PROSPECTORS' LICENCES IN ONTARIO

YEAR	MINING DIVISION	MINING CLAIMS RECORDED	MINING CLAIMS CANCELLED	MINING CLAIMS GOOD STANDING	PROSPECTORS' LICENCES ISSUED	PROSPECTORS' LICENCES RENEWED
1985	EASTERN ONTARIO	457	360	1 312	534	1 731
	KENORA	2 216	5 195	10 875	93	123
	LARDER LAKE	7 588	5 011	23 974	157	335
	PATRICIA	2 513	3 972	9 051	38	58
	PORCUPINE	6 052	10 024	23 207	219	355
	RED LAKE	2 673	2 260	8 212	67	65
	SAULT STE MARIE	1 645	5 229	17 496	66	136
	SUDBURY	1 079	1 297	4 358	188	240
	THUNDER BAY	4 353	10 222	29 285	251	393
	ONTARIO TOTAL	28 576	43 570	127 770	1 613	3 436
1986	EASTERN ONTARIO	744	426	1 579	563	1 551
	KENORA	4 041	5 054	9 863	72	113
	LARDER LAKE	6 973	6 787	24 163	213	303
	PATRICIA	7 815	3 046	13 913	58	88
	PORCUPINE	17 889	8 689	33 181	254	355
	RED LAKE	3 803	1 598	10 427	53	66
	SAULT STE MARIE	2 149	13 883	7 185	72	103
	SUDBURY	1 191	1 171	4 396	209	225
	THUNDER BAY	15 959	13 900	32 097	377	466
	ONTARIO TOTAL	60 564	54 554	136 804	1 871	3 270
1987	KENORA	5 211	2 578	12 496	94	139
	LARDER LAKE	6 742	3 854	27 146	226	303
	PATRICIA	5 540	1 918	18 786	64	65
	PORCUPINE	8 934	4 402	(R) 34 474	249	402
	RED LAKE	4 512	1 702	11 017	95	67
	SAULT STE MARIE	4 880	2 030	12 172	75	95
	SOUTHERN ONT	619	526	1 641	643	1 573
	SUDBURY	5 777	720	9 358	256	303
	THUNDER BAY	16 269	7 712	41 568	438	517
	ONTARIO TOTAL	58 484	25 442	168 658	2 140	3 464
1988	KENORA	3 358	2 812	12 694	85	141
	LARDER LAKE	3 885	4 814	26 240	183	275
	PATRICIA	2 400	2 424	18 855	45	78
	PORCUPINE	6 252	7 722	33 337	196	452
	RED LAKE	2 286	2 368	10 935	59	80
	SAULT STE MARIE	6 131	1 665	17 138	79	141
	SOUTHERN ONT	982	404	2 255	489	1 692
	SUDBURY	893	1 780	7 821	191	308
	THUNDER BAY	10 548	10 796	41 994	445	562
	ONTARIO TOTAL	36 735	34 785	171 269	1 772	3 729

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

ASSESSMENT WORK RECORDED (IN DAYS)

YEAR	MINING DIVISION	MANUAL LABOUR	DIAMOND DRILLING	GEO-PHYSICAL SURVEYS	GEO-CHEMICAL SURVEYS	GEO-LOGICAL SURVEYS	LAND SURVEYS	POWER EQUIPMENT	BULLDOZER	ASSAYING	OTHER
1981	EASTERN ONTARIO	333	11 855	4 041	564	4 022	120	2 601	220	38	823
	KENORA	490	26 127	37 624	203	3 383	200	859	1 720	4	2 122
	LARDER LAKE	2 264	69 906	125 459	210	19 536	2 360	9 677	1 141	322	16 212
	PATRICIA	10	42 588	232 184	614	4 866	5 720	133	1 449	0	72
	PORCUPINE	1 609	114 823	261 301	904	23 177	3 110	11 549	4 569	483	50 302
	RED LAKE	346	28 657	63 454	0	8 183	2 360	420	0	0	3 452
	SAULT STE MARIE	430	18 338	16 585	860	1 900	17	2 878	457	87	2 321
	SUDBURY	404	20 452	42 466	120	2 252	22	2 304	1 778	62	9 914
	THUNDER BAY	821	71 288	178 888	1 336	14 947	80	10 676	0	0	2 729
	ONTARIO TOTAL	6 707	404 034	962 002	4 811	82 266	13 989	41 097	11 334	996	87 947
1982	EASTERN ONTARIO	302	9 546	8 372	1 414	481	0	5 851	733	0	627
	KENORA	1 074	23 524	26 270	5 765	5 330	0	368	2 553	0	3 554
	LARDER LAKE	3 062	99 526	133 511	1 222	17 926	1 200	17 455	319	134	39 335
	PATRICIA	48	35 329	73 486	7 163	13 980	14 770	4 019	3 099	0	15 465
	PORCUPINE	1 585	91 203	359 970	2 067	36 178	300	21 865	9 134	543	73 252
	RED LAKE	206	23 967	79 662	0	6 787	0	3 259	16	0	4 878
	SAULT STE MARIE	223	2 760	67 833	9	3 568	48	4 663	2 167	52	432
	SUDBURY	1 047	19 719	35 557	1 126	7 374	2	1 666	2 202	1 350	80
	THUNDER BAY	1 246	133 035	114 805	5 322	24 437	1 840	9 120	0	0	2 468
	ONTARIO TOTAL	8 793	438 609	899 466	24 088	116 061	18 160	68 266	20 223	2 079	140 091

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

ASSESSMENT WORK RECORDED (IN DAYS)

YEAR	MINING DIVISION	MANUAL LABOUR	DIAMOND DRILLING	GEO-PHYSICAL SURVEYS	GEO-CHEMICAL SURVEYS	GEO-LOGICAL SURVEYS	LAND SURVEYS	POWER EQUIPMENT	BULLDOZER	ASSAYING	OTHER
1983	EASTERN ONTARIO	211	8 317	2 840	0	3 135	0	445	1 805	24	2 547
	KENORA	483	35 746	42 221	2 440	12 006	0	1 309	3 905	0	8 287
	LARDER LAKE	4 929	121 212	98 366	4 940	15 233	200	10 023	123	630	49 114
	PATRICIA	1 080	69 569	83 537	5 736	23 738	0	0	3 762	93	9 708
	PORCUPINE	1 528	128 126	199 892	3 683	44 755	0	28 013	910	254	0
	RED LAKE	609	18 672	22 035	1 960	3 468	0	252	225	0	5 986
	SAULT STE MARIE	6 812	19 299	624 560	1 435	8 142	58	2 503	244	182	1 435
	SUDBURY	1 150	17 574	12 676	385	4 040	4	818	3 100	1 161	783
	THUNDER BAY	971	113 555	439 993	24 352	64 789	4 274	6 816	0	0	10 141
	ONTARIO TOTAL	17 773	532 070	1 526 120	44 931	179 306	4 536	50 179	14 074	2 344	88 001
1984	EASTERN ONTARIO	120	9 928	23 500	20	322	0	1 539	1 184	37	886
	KENORA	867	36 055	281 359	7 319	23 670	40	1 290	3 185	0	10 907
	LARDER LAKE	2 397	93 946	245 542	4 894	44 113	1 240	19 615	12	1 064	60 997
	PATRICIA	224	42 425	113 830	2 812	24 941	1 880	1 045	303	98	17 656
	PORCUPINE	1 586	140 864	495 323	9 288	51 723	0	9 994	4 411	0	24 849
	RED LAKE	327	32 482	78 538	2 009	12 495	0	0	726	53	2 034
	SAUL STE MARIE	230	31 388	605 200	11 459	12 558	9	684	1 219	171	29 263
	SUDBURY	1 201	49 516	23 652	120	3 541	0	2 220	951	909	935
	THUNDER BAY	1 105	142 459	551 864	64 978	90 108	5 130	20 258	0	0	47 076
	ONTARIO TOTAL	8 057	579 063	2 418 808	102 899	263 471	8 299	56 645	11 991	2 332	194 603

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

ASSESSMENT WORK RECORDED (IN DAYS)

YEAR	MINING DIVISION	MANUAL LABOUR	DIAMOND DRILLING	GEO-PHYSICAL SURVEYS	GEO-CHEMICAL SURVEYS	GEO-LOGICAL SURVEYS	LAND SURVEYS	POWER EQUIPMENT	BULLDOZER	ASSAYING	OTHER
1985	EASTERN ONTARIO	335	15 619	3 192	880	650	80	939	0	0	3 703
	KENORA	666	55 090	185 148	6 063	29 765	1 000	525	3 998	0	11 345
	LARDER LAKE	3 101	95 076	276 646	6 808	19 517	0	13 769	0	502	44 984
	PATRICIA	314	92 051	148 105	7 423	20 377	1 640	560	335	272	16 391
	PORCUPINE	741	131 330	278 881	7 866	34 032	200	5 067	2 943	225	42 053
	RED LAKE	155	42 000	200 968	2 498	16 642	1 140	1 047	0	6	6 180
	SAULT STE MARIE	366	45 617	87 246	17 546	36 156	0	11 224	0	0	21 052
	SUDBURY	1 638	25 873	56 894	220	1 717	1 340	1 820	2 922	13	2 104
	THUNDER BAY	1 841	170 023	475 737	26 208	65 802	3 160	13 309	0	0	35 547
	ONTARIO TOTAL	9 157	672 679	1 712 817	75 512	224 658	8 560	48 260	10 198	1 018	183 359

YEAR	MINING DIVISION	MANUAL LABOUR	DIAMOND DRILLING	GEO-PHYSICAL SURVEYS	GEO-CHEMICAL SURVEYS	GEO-LOGICAL SURVEYS	LAND SURVEYS	POWER STRIPPING	ASSAYING	OTHER
1986	EASTERN ONTARIO	616	15 829	3 623	2 289	3 843	0	923	0	5 476
	KENORA	195	64 097	47 884	4 046	9 698	0	4 963	0	11 762
	LARDER LAKE	2 524	107 109	399 512	1 756	48 264	1 330	21 280	95	49 170
	PATRICIA	349	109 952	263 118	9 207	29 245	790	841	241	15 737
	PORCUPINE	1 021	129 932	481 547	5 362	26 266	0	26 490	205	46 699
	RED LAKE	574	48 325	127 445	3 463	6 360	440	675	203	2 148
	SAULT STE MARIE	105	59 323	27 638	13 752	18 328	0	4 574	210	7 233
	SUDBURY	2 094	22 017	14 350	110	1 658	60	1 409	0	8 122
	THUNDER BAY	1 372	110 246	281 786	7 207	24 770	1 400	16 273	356	19 362
	ONTARIO TOTAL	8 850	666 830	1 646 903	47 192	168 432	4 020	77 428	1 310	165 709

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

ASSESSMENT WORK RECORDED (IN DAYS)

YEAR	MINING DIVISION	MANUAL LABOUR	DIAMOND DRILLING	GEO-PHYSICAL SURVEYS	GEO-CHEMICAL SURVEYS	GEO-LOGICAL SURVEYS	LAND SURVEYS	ROCK DRILLS & OTHER POWER EQUIPMENT	CORE SPECIMENS	ASSAYS, MINERA-LOGICAL STUDIES	SHAFT SINKING	OTHER
1987	KENORA	1 202	86 321	153 077	6 855	12 068	0	6 807	5	10 327	0	0
	LARDER LAKE	1 111	197 727	319 836	1 363	17 872	1 324	21 722	125	38 790	256	96
	PATRICIA	44	255 334	345 748	23 509	49 750	11 560	1 452	60	4 125	0	0
	PORCUPINE	1 013	120 384	612 631	637	32 001	0	20 285	167	20 159	0	0
	RED LAKE	258	81 854	138 443	5 880	23 440	0	2 029	0	9 837	0	0
	SAULT STE MARIE	669	54 720	224 756	7 377	10 349	0	30 585	162	21 223	480	0
	SOUTHERN ONT	572	6 672	24 592	805	5 721	280	1 895	43	1 757	0	0
	SUDBURY	1 930	16 266	43 721	590	3 467	0	6 744	0	3 434	889	0
	THUNDER BAY	833	205 369	724 924	9 165	54 632	3 160	38 001	392	33 738	0	0
	ONTARIO TOTAL	7 632	1 024 647	2 587 728	56 181	209 300	16 324	129 520	954	143 390	1 625	96
1988	KENORA	529	119 947	267 990	3 630	16 957	0	10 966	40	23 485	0	0
	LARDER LAKE	2 279	209 276	333 274	4 971	34 998	5 570	22 432	492	39 609	356	880
	PATRICIA	128	179 235	279 066	4 184	66 974	0	1 216	269	25 083	0	0
	PORCUPINE	468	129 191	349 284	1 900	22 340	0	16 563	24	53 390	0	0
	RED LAKE	906	175 600	215 301	5 923	42 666	0	8 096	0	9 009	0	0
	SAULT STE MARIE	573	133 386	301 089	8 480	22 630	1 920	19 853	552	25 379	0	0
	SOUTHERN ONT	621	17 643	24 345	1 453	2 284	0	1 047	81	6 885	0	0
	SUDBURY	1 075	21 303	255 824	2 149	8 746	0	11 621	0	4 051	0	23
	THUNDER BAY	1 790	291 549	633 285	16 932	77 032	2 760	54 243	8	38 741	0	0
	ONTARIO TOTAL	8 369	1 277 130	2 659 458	49 622	294 627	10 250	146 037	1 466	225 632	356	903

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

SMELTING AND REFINING OF METALLIC MINERALS MINED IN ONTARIO

SMELTING OF METALLIC MINERALS MINED IN ONTARIO

MINERAL COMMODITY	YEAR	UNIT OF VOLUME	ONT. MINE PRODUCTION	ONT. MINE PRODUCTION SMELTED IN ONTARIO	ONT. MINE PRODUCTION SMELTED IN ONTARIO AS A % OF ONT. MINE PRODUCTION	ONT. MINE PRODUCTION SMELTED OUTSIDE OF CANADA AS A % OF ONT. MINE PRODUCTION
CADMIUM	1981	TONNE	609	483	79.3	5.7
	1982		549	460	83.8	1.3
	1983		668	429	64.2	1.5
	1984		834	623	74.7	.5
	1985		848	626	73.8	.0
	1986		760	595	78.3	.0
	1987		760	530	69.7	.0
CALCIUM	1981	TONNE	469	469	100.0	.0
	1982		329	329	100.0	.0
	1983		399	399	100.0	.0
	1984		515	515	100.0	.0
	1985		739	739	100.0	.0
	1986		312	312	100.0	.0
	1987		498	498	100.0	.0
COBALT	1981	TONNE	1 831	1 831	100.0	.0
	1982		966	966	100.0	.0
	1983		1 025	1 025	100.0	.0
	1984		1 614	1 614	100.0	.0
	1985		1 731	1 731	100.0	.0
	1986		2 012	2 012	100.0	.0
	1987		2 039	2 039	100.0	.0
COPPER	1981	TONNE	226 385	136 290	60.2	.4
	1982		157 849	86 476	54.8	.4
	1983		226 796	150 478	66.3	.1
	1984		292 423	218 495	74.7	2.4
	1985		278 540	213 565	76.7	1.4
	1986		264 413	206 384	78.1	1.2
	1987		282 915	219 131	77.5	3.0

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

SMELTING OF METALLIC MINERALS MINED IN ONTARIO

MINERAL COMMODITY	YEAR	UNIT OF VOLUME	ONT. MINE PRODUCTION	ONT. MINE PRODUCTION SMELTED IN ONTARIO	ONT. MINE PRODUCTION SMELTED IN ONTARIO AS A % OF ONT. MINE PRODUCTION	ONT. MINE PRODUCTION SMELTED OUTSIDE OF CANADA AS A % OF ONT. MINE PRODUCTION
GOLD	1981	G	18 308 000	15 527 000	84.8	7.1
	1982		20 136 000	17 707 000	87.9	3.3
	1983		23 260 000	20 650 000	88.8	3.9
	1984		27 821 000	21 479 000	77.2	11.9
	1985		31 600 000	26 598 000	84.2	10.1
	1986		46 141 000	30 740 000	66.6	7.6
	1987		53 081 000	36 467 000	68.7	1.8
IRON ORE	1981	TONNE	5 394 620	5 365 708	99.5	.5
	1982		3 650 257	3 593 517	98.4	1.6
	1983		3 815 699	3 641 085	95.4	4.6
	1984		4 550 660	4 550 660	100.0	.0
	1985		4 327 584	4 327 158	100.0	.0
	1986		3 459 128	3 448 436	99.7	.0
	1987		3 235 542	3 235 542	100.0	.0
LEAD	1981	TONNE	3 384	1 267	37.4	58.6
	1982		5 697	3 238	56.8	35.2
	1983		6 544	2 502	38.2	.0
	1984		8 931	5 104	57.1	39.2
	1985		3 819	2 333	61.1	32.4
	1986		6 065	1 971	32.5	58.2
	1987		5 863	1 202	20.5	50.9
MAGNESIUM	1981	TONNE	8 548	8 548	100.0	.0
	1982		7 630	7 630	100.0	.0
	1983		5 980	5 980	100.0	.0
	1984		7 588	7 588	100.0	.0
	1985		8 446	8 446	100.0	.0
	1986		8 748	8 748	100.0	.0
	1987		9 373	9 373	100.0	.0

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

SMELTING OF METALLIC MINERALS MINED IN ONTARIO

MINERAL COMMODITY	YEAR	UNIT OF VOLUME	ONT. MINE PRODUCTION	ONT. MINE PRODUCTION SMELTED IN ONTARIO	ONT. MINE PRODUCTION SMELTED IN ONTARIO AS A % OF ONT. MINE PRODUCTION	ONT. MINE PRODUCTION SMELTED OUTSIDE OF CANADA AS A % OF ONT. MINE PRODUCTION
NICKEL	1981	TONNE	130 269	130 269	100.0	.0
	1982		63 956	63 956	100.0	.0
	1983		88 292	88 292	100.0	.0
	1984		132 442	132 442	100.0	.0
	1985		131 035	131 035	100.0	.0
	1986		121 851	121 851	100.0	.0
	1987		130 171	130 171	100.0	.0
PLATINUM GROUP	1981	KG	11 905	11 737	98.6	.0
	1982		7 105	7 025	98.9	.0
	1983		6 964	6 964	100.0	.0
	1984		10 245	10 245	100.0	.0
	1985		11 594	11 594	100.0	.0
	1986		10 927	10 927	100.0	.0
	1987		9 816	9 816	100.0	.0
SILVER	1981	KG	328 779	72 156	21.9	18.2
	1982		346 974	93 030	26.8	22.6
	1983		414 696	75 369	18.2	11.8
	1984		516 526	105 695	20.5	15.2
	1985		430 094	190 599	44.3	8.0
	1986		361 537	133 726	37.0	13.4
	1987		438 048	183 312	41.8	11.1
ZINC	1981	TONNE	246 031	109 184	44.4	25.2
	1982		260 544	105 628	40.5	27.4
	1983		274 819	99 547	36.2	27.0
	1984		294 131	121 626	41.4	27.8
	1985		266 938	127 731	47.9	22.3
	1986		285 452	126 934	44.5	20.1
	1987		282 397	114 423	40.5	16.6

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REFINING OF METALLIC MINERALS MINED IN ONTARIO

MINERAL COMMODITY	YEAR	UNIT OF VOLUME	ONT. MINE PRODUCTION	ONT. MINE PRODUCTION REFINED IN ONTARIO	ONT. MINE PRODUCTION REFINED IN ONTARIO AS A % OF ONT. MINE PRODUCTION	ONT. MINE PRODUCTION REFINED OUTSIDE OF CANADA AS A % OF ONT. MINE PRODUCTION
CADMIUM	1981	TONNE	609	483	79.3	5.7
	1982		549	460	83.8	1.3
	1983		668	429	64.2	1.5
	1984		834	623	74.7	.5
	1985		848	626	73.8	.0
	1986		760	595	78.3	.0
	1987		760	530	69.7	.0
CALCIUM	1981	TONNE	469	469	100.0	.0
	1982		329	329	100.0	.0
	1983		399	399	100.0	.0
	1984		515	515	100.0	.0
	1985		739	739	100.0	.0
	1986		312	312	100.0	.0
	1987		498	498	100.0	.0
COBALT	1981	TONNE	1 831	785	42.9	57.1
	1982		966	400	41.4	58.6
	1983		1 025	326	31.8	68.1
	1984		1 614	859	53.2	46.8
	1985		1 731	934	54.0	46.1
	1986		2 012	1 056	52.5	38.4
	1987		2 039	1 202	59.0	36.2
COPPER	1981	TONNE	226 385	114 037	50.4	10.2
	1982		157 849	73 715	46.7	8.5
	1983		226 796	128 229	56.5	10.0
	1984		292 423	190 298	65.1	12.1
	1985		278 540	188 239	67.6	10.5
	1986		264 413	186 710	70.6	8.7
	1987		282 915	201 278	71.1	7.2

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REFINING OF METALLIC MINERALS MINED IN ONTARIO

MINERAL COMMODITY	YEAR	UNIT OF VOLUME	ONT. MINE PRODUCTION	ONT. MINE PRODUCTION REFINED IN ONTARIO	ONT. MINE PRODUCTION REFINED IN ONTARIO AS A % OF ONT. MINE PRODUCTION	ONT. MINE PRODUCTION REFINED OUTSIDE OF CANADA AS A % OF ONT. MINE PRODUCTION
GOLD	1981	G	18 308 000	15 527 000	84.8	7.1
	1982		20 136 000	17 707 000	87.9	3.3
	1983		23 260 000	20 650 000	88.8	3.9
	1984		27 821 000	21 479 000	77.2	11.9
	1985		31 600 000	26 598 000	84.2	10.1
	1986		46 141 000	30 740 000	66.6	7.6
	1987		53 081 000	36 467 000	68.7	1.8
IRON ORE	1981	TONNE	5 394 620	5 365 708	99.5	.5
	1982		3 650 257	3 593 517	98.4	1.6
	1983		3 815 699	3 641 085	95.4	4.6
	1984		4 550 660	4 550 660	100.0	.0
	1985		4 327 584	4 327 158	100.0	.0
	1986		3 459 128	3 448 436	99.7	.0
	1987		3 235 542	3 235 542	100.0	.0
LEAD	1981	TONNE	3 384	0	.0	96.1
	1982		5 697	0	.0	92.0
	1983		6 544	0	.0	38.2
	1984		8 931	0	.0	96.4
	1985		3 819	0	.0	93.5
	1986		6 065	0	.0	90.7
	1987		5 863	0	.0	71.4
MAGNESIUM	1981	TONNE	8 548	8 548	100.0	.0
	1982		7 630	7 630	100.0	.0
	1983		5 980	5 980	100.0	.0
	1984		7 588	7 588	100.0	.0
	1985		8 446	8 446	100.0	.0
	1986		8 748	8 748	100.0	.0
	1987		9 373	9 373	100.0	.0

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

REFINING OF METALLIC MINERALS MINED IN ONTARIO

MINERAL COMMODITY	YEAR	UNIT OF VOLUME	ONT. MINE PRODUCTION	ONT. MINE PRODUCTION REFINED IN ONTARIO	ONT. MINE PRODUCTION REFINED IN ONTARIO AS A % OF ONT. MINE PRODUCTION	ONT. MINE PRODUCTION REFINED OUTSIDE OF CANADA AS A % OF ONT. MINE PRODUCTION
NICKEL	1981	TONNE	130 269	77 389	59.4	40.6
	1982		63 956	42 035	65.7	35.2
	1983		88 292	53 205	60.3	43.6
	1984		132 442	77 138	58.2	42.0
	1985		131 035	74 057	56.5	43.6
	1986		121 851	60 987	50.1	40.4
	1987		130 171	69 336	53.3	41.5
PLATINUM GROUP	1981	KG	11 905	0	.0	100.0
	1982		7 105	0	.0	100.0
	1983		6 964	0	.0	100.0
	1984		10 245	0	.0	100.0
	1985		11 594	0	.0	100.0
	1986		10 927	0	.0	99.6
	1987		9 816	0	.0	99.7
SILVER	1981	KG	328 779	60 733	18.5	21.7
	1982		346 974	92 444	26.6	22.8
	1983		414 696	67 978	16.4	13.5
	1984		516 526	105 695	20.5	15.2
	1985		430 094	190 599	44.3	8.0
	1986		361 537	74 289	20.5	13.4
	1987		438 048	100 265	22.9	11.1
ZINC	1981	TONNE	246 031	109 184	44.4	25.2
	1982		260 544	105 628	40.5	27.4
	1983		274 819	99 547	36.2	27.0
	1984		294 131	121 626	41.4	27.8
	1985		266 938	127 731	47.9	22.3
	1986		285 452	126 934	44.5	20.1
	1987		282 397	114 423	40.5	16.6

SOURCE: ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

APPENDIX

CONVERSION FACTORS
USED TO CONVERT CURRENT DOLLARS
TO 1971 DOLLARS

YEAR	CONVERSION FACTOR	
1968	88.70000	
1969	92.70000	
1970	96.80000	
1971	100.00000	<-----------------
1972	104.90000	
1973	113.70000	
1974	129.40000	
1975	146.50000	
1976	160.40000	
1977	171.70000	
1978	182.70000	
1979	200.70000	
1980	222.70000	
1981	246.30000	
1982	274.20000	
1983	290.50000	
1984	301.20000	
1985	313.50000	
1986	329.20000	
1987	342.40000	
1988	357.80000	(E)

SOURCES: STATISTICS CANADA PUBLICATION 11-003
ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES, INFORMATION & STATISTICS SECTION

METRIC CONVERSION FACTORS USED IN THIS REPORT

MINERAL COMMODITY	IMPERIAL UNIT		METRIC UNIT
ANTIMONY	POUNDS	= .45359	KILOGRAMS
ASBESTOS BARITE	SHORT TONS	= .90718	TONNES
BERYLLIUM BISMUTH CADMIUM CALCIUM	POUNDS	= .45359	KILOGRAMS
CEMENT CHROMITE	SHORT TONS	= .90718	TONNES
COAL	SHORT TONS	= .90718	TONNES
COBALT COLUMBIUM(CB2O5) COPPER	POUNDS	= .45359	KILOGRAMS
FLUORSPAR GEMSTONES	SHORT TONS	= .90718	TONNES
GOLD	TROY OUNCES	=31.10347	GRAMS
GYPSUM IRON ORE	SHORT TONS	= .90718	TONNES
LEAD	POUNDS	= .45359	KILOGRAMS
LIME	SHORT TONS	= .90718	TONNES
MAGNESIUM	POUNDS	= .45359	KILOGRAMS
MAGNESITIC DOLOMITE	SHORT TONS	= .90718	TONNES
MICA MOLYBDENUM	POUNDS	= .45359	KILOGRAMS
NATURAL GAS	M CU FEET	= 28.316	K CU METRE
NATURAL GAS BY-PROD.	CUBIC FEET	= .02831	CUBIC METRES
NEPHELINE SYENITE	SHORT TONS	= .90718	TONNES

SOURCE: CANADIAN STANDARDS ASSOCIATION

METRIC CONVERSION FACTORS USED IN THIS REPORT

MINERAL COMMODITY	IMPERIAL UNIT			METRIC UNIT
NICKEL	POUNDS	=	.45359	KILOGRAMS
PALLADIUM	TROY OUNCES	=	.03110	KILOGRAMS
PEAT	SHORT TONS	=	.90718	TONNES
PETROLEUM	BARRELS	=	.15898	CU METRE
PLATINUM	TROY OUNCES	=	.03110	KILOGRAMS
PLATINUM GROUP				
POTASH	SHORT TONS	=	.90718	TONNES
PYRITE PYRRHOTITE				
QUARTZ				
SALT				
SAND & GRAVEL				
SELENIUM	POUNDS	=	.45359	KILOGRAMS
SILVER	TROY OUNCES	=	.03110	KILOGRAMS
SOAPSTONE, TALC	SHORT TONS	=	.90718	TONNES
SODIUM SULPHATE				
STONE				
SULPHUR				
TANTALUM(TA2O5)	POUNDS	=	.45359	KILOGRAMS
TELLURIUM				
THORIUM				
TIN				
TITANIUM DIOXIDE	SHORT TONS	=	.90718	TONNES
TUNGSTEN(WO3)	POUNDS	=	.45359	KILOGRAMS
URANIUM(U)				
YTTRIUM(Y2O3)				
ZINC				

SOURCE: CANADIAN STANDARDS ASSOCIATION

* AVERAGE MINERAL COMMODITY PRICES IN CANADA

MINERAL COMMODITY	UNIT	CANADIAN DOLLARS	
		1988P	1987R
BISMUTH	KG	15.438	10.611
CADMIUM	KG	19.079	5.811
CALCIUM	KG	10.447	11.255
CEMENT	TONNE	82.530	77.270
COAL	TONNE	27.450	26.810
COBALT(SHOT/CATHODE)	KG	20.439	20.463
COBALT(US SPOT CATH)	KG	19.020	18.920
COLUMBIUM	KG	7.055	7.597
COPPER	KG	3.156	2.422
GOLD	G	17.298	19.034
GYPSUM	TONNE	13.510	11.270
INDIUM	KG	387.223	313.341
IRIDIUM	KG	16 620.778	21 901.860
IRON ORE	TONNE	40.440	46.580
LEAD	KG	1.014	1.058
LIME	TONNE	74.920	67.760
MAGNESIUM	KG	4.241	4.423
MOLYBDENUM(OXIDE)	KG	9.359	8.475
NATURAL GAS	K CU M	56.580	59.030
NEPHELINE SYENITE	TONNE	43.180	40.800
NICKEL	KG	15.196	6.984
OSMIUM	KG	23 341.409	26 962.516
PALLADIUM	KG	5 946.859	6 394.687
PEAT	TONNE	106.66	131.310
PETROLEUM CRUDE	CU M	113.070	152.760
PLATINUM	KG	23 743.969	25 578.812
RHODIUM	KG	50 548.303	52 862.836
RUTHENIUM	KG	2 459.435	2 975.487
SALT	TONNE	23.080	24.480
SAND & GRAVEL	TONNE	2.830	2.750
SELENIUM	KG	27.367	18.939
SILVER	KG	267.655	308.422
STONE	TONNE	5.140	4.880
SULPHUR	TONNE	81.640	93.980
TANTALUM	KG	102.303	60.050
TIN	KG	8.979	9.226
URANIUM(U)	KG	115.210	118.600
ZINC	KG	1.653	1.274

* BASED ON AVERAGE OF 12 MONTHS

SOURCE: ENERGY MINES AND RESOURCES AND ONTARIO MINISTRY OF NORTHERN DEVELOPMENT AND MINES
INFORMATION & STATISTICS SECTION